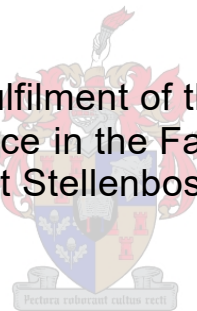


Factors influencing Nurses' decisions and actions when applying Standard Precautions for infection prevention in a private hospital in Namibia

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Thesis presented in partial fulfilment of the requirements for the degree of Master of Nursing Science in the Faculty of Medicine and Health Sciences at Stellenbosch University



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April 2019

DECLARATION

By submitting this thesis electronically, I declare that the entirety of the work contained therein is my own, original work, that I am the sole author thereof (save to the extent explicitly otherwise stated), that reproduction and publication thereof by Stellenbosch University will not infringe any third party rights and that I have not previously in its entirety or in part submitted it for obtaining any qualification.

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To my husband, Kenneth, my daughter Venusckha, and my son Brandell: I am grateful for your help.

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ABSTRACT

Background: Healthcare-associated infections (HAIs) are considered a leading risk factor for patients and healthcare workers in healthcare environments (Haile, Engeda & Abdo, 2017:1). Both nurses and patients are exposed to infections that use various transmission modes, including droplets, contact and airborne transmission (Haile *et al.*, 2017:1). Standard Precautions for infection prevention and control (IPC) must form part of nursing activities to break the chain of infections and to manage and reduce HAIs. The increase in the number of HAIs occurring among patients means that nurses should comply with Standard Precautions to protect themselves and the patients. However, research shows that there are a number of factors that influence nurses when they have to implement Standard Precautions while engaged in nursing practice

Purpose: The aim of this study was to explore and describe the contextual factors that influence nurses' decisions and actions with respect to applying Standard Precautions as part of their nursing practice. This was done in a Namibian private healthcare setting with the goal of informing IPC training and strategies in an effort to facilitate nurses' consistent and correct application of Standard Precautions at the study site.

Methodology: The study used a qualitative approach with a descriptive study design. Participants contributed data during three focus group discussions where discussion was stimulated with semi-structured open-ended questions as triggers. The study sample was drawn from the population of nurses (registered nurse/midwife and enrolled nurses) working at the study site in November 2017. A thematic analysis guided by Boyatzi's approach was used to analyse the narrative data.

Findings: Four broad themes emerged from the data. These themes and their accompanying sub-themes referred to the healthcare giver's knowledge of Standard Precautions, stumbling blocks, factors that help and Reinforcing Behaviour Change.

KEYWORDS: Healthcare-associated infections, Standard Precautions, contextual factors

OPSOMMING

Agtergrond: Infeksies wat geassosieer word met gesondheidsorg (IAG's) is tans die grootste risikofaktor vir pasiënte en gesondheidsorgwerkers binne die gesondheidsorgomgewing (Haile, Engeda & Abdo, 2017:1). Beide verpleegkundiges en pasiënte word blootgestel aan infeksies wat op verskeie maniere oorgedra word, byvoorbeeld druppels, kontak of deur die lug (Haile *et al.*, 2017:1). Verpleegkundiges behoort standaard voorsorgmaatreëls na te kom tydens verpleegaktiwiteite om infeksies te voorkom en te beheer (IVB). Sodoende kan die ketting van infeksies gebreek word en IAG's bedwing en verminder word. Die toename in hierdie soort infeksies onder pasiënte beteken dat verpleegkundiges standaard voorsorgmaatreëls moet nakom om hulleself en pasiënte te beskerm. Navorsing toon egter dat verskeie faktore 'n rol speel wanneer verpleegkundiges standaard voorsorgmaatreëls moet nakom terwyl hulle sorg gee.

Doelwit: Die doel van die studie was om die kontekstuele faktore wat verpleegkundiges se besluite en optrede wanneer hulle standaard voorsorgmaatreëls moet nakom terwyl hulle verpleeg te ondersoek. Die studie is in 'n Namibiese privaat gesondheidsorginstelling onderneem met die doel om IVB-opleiding en -strategieë te verryk om sodoende die verpleegsters se konsekwente en korrekte implementering van standaard voorsorgmaatreëls fasiliteer.

Metodologie: Die studie het gebruik gemaak van 'n kwalitatiewe benadering met 'n beskrywende studie-ontwerp. Data is ingesamel deur middel van drie fokusgroepgesprekke waar gesprekke gestimuleer is met semigestruktureerde oopende vrae as snellers. Die steekproef is geneem uit die populasie verpleegkundiges (geregistreerd en ingeskrewe) wat by die hospitaal werksaam was gedurende November 2017. 'n Tematiese analise begelei deur Boyatzi se benadering is gebruik om die narratiewe data te analiseer.

Bevindinge: Vier breë temas het uit die data te voorskyn gekom. Hierdie temas en die meegaande subtemas het verwys na die gesondheidswerker se kennis van standaard voorsorgmaatreëls, struikelblokke, aspekte wat bydra en motiveerders vir gedragsverandering.

SLEUTELWOORDE: Infeksies geassosieer met gesondheidsorg, standarde voorsorg, kontekstuele faktore

ABBREVIATIONS

HAIs	Healthcare-associated infections
CDC	Centres for Disease Control and Prevention
WHO	World Health Organization
HREC	Health Research Ethics Committee
IPC	Infection Prevention and Control
MOHSS	Ministry of Health and Social Services
PPE	Personal protective equipment
AIDS	Acquired immune deficiency syndrome
HCWs	Health care workers
SP	Standard Precautions

TABLE OF CONTENTS

Declaration	i
Acknowledgements	ii
Abstract	iii
Opsomming	iv
Abbreviations	v

CHAPTER 1

1.1 INTRODUCTION AND BACKGROUND.....	1
1.2 RATIONALE.....	5
1.3 PROBLEM STATEMENT	7
1.4 RESEARCH QUESTION.....	8
1.5 RESEARCH AIM.....	8
1.6 RESEARCH OBJECTIVES	8
1.7 RESEARCH METHODOLOGY	8
1.7.1 RESEARCH DESIGN.....	8
1.7.2 POPULATION AND SAMPLING	9
1.8 DATA COLLECTION.....	9
1.9 DATA ANALYSIS	10
1.10 LITERATURE.....	10
1.11 DATA MANAGEMENT	10
1.12 TRUSTWORTHINESS	10
1.13 ETHICAL CONSIDERATIONS.....	11
1.14 OPERATIONAL DEFINITIONS.....	13
1.15 DURATION OF THE STUDY	14
1.16 CHAPTER OUTLINE.....	14
1.17 SUMMARY	14
1.18 CONCLUSION	15

CHAPTER 2

2.1	INTRODUCTION.....	16
2.2	RESEARCH DESIGN.....	16
2.3	STUDY SETTING.....	17
2.4	POPULATION AND SAMPLE	17
2.4.1	SAMPLING STRATEGY.....	18
2.4.2	SAMPLE SIZE	19
2.5	INTERVIEW GUIDE	19
2.6	PILOT INTERVIEW	20
2.7	DATA COLLECTION PROCESS	20
2.8	DATA ANALYSIS	24
2.9	LITERATURE REVIEW AND INTEGRATION	32
2.10	TRUSTWORTHINESS	33
2.11	CONCLUSION	35

CHAPTER 3

3.1	INTRODUCTION.....	36
3.2	SECTION I: PROFILE OF PARTICIPANTS	37
3.3	SECTION II: DISCUSSION OF THEMES	39
3.4	THEME 1:.....	40
3.5	THEME 2.....	55
3.6	THEME 3.....	56
3.7	THEME 4.....	59
3.8	CONCLUSION	60

CHAPTER 4

4.1	INTRODUCTION.....	61
4.2	CONCLUSIONS AND EVALUATION.....	61
4.2.1	THEME 1	61
4.2.2	THEME 2.....	62
4.2.3	THEME 3.....	63

4.2.4	THEME 4	63
4.3	CONCLUSION ERROR! BOOKMARK NOT DEFINED.	
4.4	RECOMMENDATIONS	65
4.6	LIMITATIONS OF THE RESEARCH.....	67
4.7	SUMMARY	67
4.8	CONCLUSION	68
 REFERENCE LIST		 68
 ANNEXURES		 77

LIST OF TABLES

Table 2.1:	Example of notes	27
Table 2.2:	From quotes to code	28
Table 2.3:	Codebook.....	29
Table 2.4:	From codes to sub-themes to themes	30
Table 2.5:	Defining and naming themes.....	32
Table 3.1:	Demographic profile	38
Table 3.2:	Themes and sub-themes.....	39
Table 3.3:	Sub-themes	41
Table 3.4:	Sub-themes	50
Table 3.5:	Sub-themes	56
Table 3.6:	Sub-theme.....	59

CHAPTER 1: OVERVIEW OF THE STUDY

1.1 INTRODUCTION AND BACKGROUND

Healthcare-associated infections (HAIs) are defined as infections acquired by patients while receiving medical care in a hospital, dialysis unit or when admitted as a day patient (Centres for Disease Control and Prevention, 2018). Previously known as nosocomial infections, HAIs are not present in a person when admitted to a healthcare setting but occur within 48 hours of that person's admission (Collins, 2008:2). While patients are usually expected to recover when admitted to hospitals or any medical facilities, some patients deteriorate due to HAIs (Annadurai, Danasekaran & Mani, 2014:67).

Worldwide, HAIs have been a concern since the 1970s (Sydnor & Perl, 2011:2). The WHO estimates that out of every 100 hospitalised patients, seven patients in developed countries and ten patients in developing countries become infected with at least one HAI (WHO, 2010:1). Healthcare settings with active surveillance systems have a better chance of controlling HAIs (Annadurai *et al.*, 2014:67). Surveillance is one of the strategies recommended by World Health Organization (WHO) to manage and understand HAIs in healthcare environments (Nouetchognou, Ateudjieu, Bonaventure, Mesumbe & Mbanya, 2016:1). Dramowski, Mehtar and Woods (2014) suggest that an active surveillance system assists healthcare practitioners in gathering information on HAIs. It is through surveillance that nurses become aware of and try to implement measures to prevent the high incidence of HAIs (Dramowski *et al.*, 2014:1).

Collins (2008:2) notes that HAI rates remain high and pose a significant problem in both developing and developed countries. Evidence in Europe shows HAIs have an associated high cost due to mortality, increased unnecessary patient deaths, and morbidity increased rate of disease (Pittet, Allegranzi, Storr, Bagheri Nejad, Dziekan, Leotsakos & Donaldson, 2008:285). HAIs are considered to contribute to 37 000 unnecessary patient deaths, adding to medical costs and prolonging hospital admission by 16 million extra days (Pittet *et al.*, 2008:285). Similarly, in the United States, the cost of HAIs is estimated to be between \$28 and \$33 billion (Collins, 2008:2). In Sub-Saharan Africa, the incidence of HAIs is between 5.7 and 19.1%, while in South Africa the incidence is estimated at 10–20% per 1 000 patients' days

(Lowman, 2016:489). Subsequent research in countries including Burkina Faso, Ghana, Senegal, Uganda among many others, shows similar results (Lowman, 2016:489). The increasing cost of care and negative effect (poor prognosis) on healthcare outcomes due to HAIs mean that this problem needs attention (Haile *et al.*, 2017:2; Collins 2008:2).

The WHO (2014:1) now identifies HAIs as an adverse event related to the care patients receive from healthcare workers. One of the most essential measures used to control HAIs is the application of Standard Precautions. Standard Precautions are a set of recommended infection prevention and control (IPC) measures published by the CDC (Siegel, Rhinehart, Jackson & Chiarello, 2007:1). When applied correctly, Standard Precautions have been demonstrated to reduce the incidence of HAIs (Mehta, Gupta, Todi, Myatra, Samaddar, Patil, Bhattacharya & Ramasubban, 2014:150). With the incidence of HAIs considered as one indicator of quality care, a lower incidence rate may be linked to a better quality of nursing care provided (Collins, 2008:547). Therefore, the correct execution of Standard Precautions to optimise patient outcomes by preventing HAIs can be seen as a method to improve the quality of healthcare delivery (Braun & Clarke, 2006:2), while failure to comply with Standard Precautions can result in a high level of HAIs, which relates to a poor quality of care.

The primary sources of HAIs are patients themselves, healthcare workers and the hospital environment (Collins, 2008:2). Among these sources, researchers regard poor hygiene practices by healthcare workers as the primary cause of HAIs in healthcare facilities (Khan, Baig & Mehboob, 2017:478). Amoran and Onwube (2013:156) note that HAIs are transmitted during many direct patient care activities. This causes cross-infection, for example during primary hygiene care activities, drawing blood samples, doing wound care, inserting urinary catheters, and airway suctioning, among others. A complex hospital environment such as overcrowded hospital and hospitals with less resources further increases cross-infection, and this puts hospitalized patients at a more significant risk for HAIs (Ali, Birhane, Bekele, Kibru, Teshager, Yilma, Ahmed, Fentahun, Assefa, Gashaw, ... Gudina, 2018:3). However, if healthcare workers, in particular nurses who spend most of their time with patients, apply infection control practices correctly and consistently, then the transmission of HAIs may be reduced (Collins, 2008:1).

Healthcare-associated infections are considered the leading health risk that patients and healthcare workers currently face (Haile *et al.*, 2017:1). Nurses' and patients' exposure to HAIs comes from various transmission modes, including droplet transmission, contact transmission and airborne transmission (Haile *et al.*, 2017:1). Examples of the types of HAIs that can be caused include ventilator-associated pneumonia, central line-associated bloodstream infections, surgical site infections and catheter-associated urinary tract infections (CDC, 2014:1). To limit HAIs, nurses must implement infection control measures to break the chain of infection (Khan *et al.*, 2017:478). The chain of infection is for example when infectious agents such as pseudomonas is found in a patient's open fracture wound, and during dressing of this wound the healthcare worker's hands come in contact with this infectious agent and the contaminated healthcare worker's hands transfer the pseudomonas to a susceptible patient (Ali *et al.*, 2018:3).

The most effective ways to break this chain of infection is correctly applying infection control measures in the form of Standard Precautions. Standard Precautions break the chain of infection either by destroying the pathogens, altering the environment pathogens flourish in, or reducing the transmission of pathogens from one person to another (Ali *et al.*, 2018:3). According to Khan *et al.* (2017:478), Standard Precautions include measures like respiratory hygiene (cough etiquette), use of personal protective equipment (aprons), injection safety practices, correct medication storage and handling, as well as correct cleaning and disinfection of devices and environmental surfaces. By implementing these measures, the transmission of infection is disrupted in several ways. For example, when implementing respiratory hygiene measures for a patient with tuberculosis, isolating the patient will limit the spread of airborne pathogens; health care workers using personal protective equipment such as N95 respirator masks protect their own respiratory system and they protect the patients from the healthcare worker as the patient's immune system is already compromised and thus vulnerable to further infection.

The benefits of applying Standard Precautions in patient care include protecting healthcare workers and patients from exposure to infections, supporting cost-effective care, and better patient care outcomes (Collins, 2008:4; Haile *et al.*, 2017:2). When healthcare workers do not adhere to these recommended Standard Precautions, the

incidence of HAIs is likely to increase. This then has a domino-type effect which then affects patient morbidity and mortality, increases quality of care, extends the length of stay in the hospital and contributes to antimicrobial resistance (Collins, 2008:2; Stephen, Liang, Theodoro, Schuur & Marschall; 2014:299 Haile *et al.*, 2017:2;). Due to these negative consequences, healthcare authorities worldwide introduced infection control policies to mandate compliance with Standard Precautions in healthcare environments. For example infection control programmes.

Despite engaging with infection control programmes, the correct and consistent application of Standard Precautions in developing countries remains a significant challenge (Akagbo, Nortey& Ackumey, 2017:2). There are factors that contribute to healthcare workers' non-compliance in applying Standard Precautions. Firstly, most healthcare institutions in developing countries experience a shortage of basic supplies, such as appropriate gloves and masks (Efsthathiou, Papastavrou, Raftopoulos, & Merkouris, 2011:55). Secondly, some countries experience high temperatures with poorly ventilated hospitals, making it uncomfortable to wear protective clothing like gowns (Ratnayake & Ratnayake, 2018:3). Thirdly, many developing countries experience staff shortages with commensurate high workloads where applying Standard Precautions is seen by healthcare personnel as time-consuming (Tebeje & Hailu, 2010:60). Further to this, incidents linked to poor IPC practices frequently occur in busy departments of hospitals such as emergency care environments (Stephen *et al.*, 2014:299). Lastly, lack of proper training about Standard Precautions and the principles of infection prevention and control, in general, has been reported, highlighting the lack of organizational support for safe practice (Yenesew & Fekadu, 2014:19).

Poor safety practices are recognised as a problem in developing countries. This means that the application of Standard Precautions is often not given the necessary attention to ensure compliance among practitioners (Gessesew & Kahsu, 2009:3). The importance of correct implementation of infection prevention and control in healthcare settings cannot be underestimated because there is always a risk of spreading infection due to failure to comply with Standard Precautions.

1.2 RATIONALE

The Ministry of Health and Social Services (MOHSS) in Namibia has well-established healthcare policies for public and private healthcare settings. In 2010, the MOHSS in Namibia incorporated infection control and prevention guidelines into the healthcare policy for the country (MOHSS, 2010). These guidelines were developed through a wide consultation process with the private and public health sectors and offices. The guidelines developed were based on the WHO and CDC Infection Prevention and Control guidelines of 2004. The overarching purpose of this guideline is to provide evidence-based standardized best practices for infection control procedures in the Namibian healthcare settings. The guidelines were reviewed in 2015, and emphasize those healthcare activities that promote the prevention and control of infections in the healthcare settings.

Health care policy in Namibia as established by the MOHSS requires all healthcare settings, including the private sector service providers to develop and implement infection prevention and control guidelines to prevent transmission of infectious organisms among patients, staff and visitors. Within this regulatory and policy framework, the study site must similarly have IPC policies, practices, and surveillance measures in place (MOHSS, 2010).

At the study site, ongoing training related to IPC practices and surveillance of HAIs form the cornerstones of this institution's IPC policy implementation. Key responsibilities of the infection prevention and control nurse include conducting regular rounds in the hospital; managing all microbiological results and ensuring adequate isolation precautions and facilities to prevent or minimize the spread of infections; providing training during induction; coordinating continuous professional development IPC training programmes; providing on-the-spot training; and developing IPC policies and guidelines that are being disseminated to various departments. In addition, there is an active surveillance system in the hospital to identify and manage HAIs. The hospital management team uses infection risk, rate, and trend information to design or change processes to reduce HAIs to the lowest levels. The target for the HAIs incident rate in the hospital is 1.4%. However, the current HAI rate is 2.5 %. The hospital compares its infection rates with other similar private health care settings by means of a database (same size and services).

For private hospitals, curbing HAIs is essential to avoid unnecessary loss of income and other costs related to HAIs. Although the incidence of HAIs at the study site is lower when compared to similar healthcare settings, HAIs still do occur regularly. Based on the hospital and IPC data from 2017, of the 7 966 patient admissions from January to December 2017, 28 HAI incidents were recorded for the hospital. This equates to approximately three out of every 100 patients admitted to the hospital getting HAIs. The median length of stay among patients who contracted an HAI was 14 days, significantly longer than the four days for patients who did not develop an HAI. Most of the patients who developed HAIs were admitted to the multidisciplinary intensive care (MICU), followed by general surgery, orthopaedics, the medical ward, paediatrics and neonatal ICU. Ventilator-associated infections were the most common HAI (10/28 35.7%), followed by surgical site infections (9/28 32.1%), catheter-associated urinary tract infection (5/28 17.8%) and bloodstream associated infections (4/28 14.2%). *Staphylococcus aureus*, *pseudomonas*, *enterococcus faecalis*, *klebsiella*, *proteus mirabilis*, *serratia marcescens*, *stenotrophomonas maltophilia*, and *enterobacter cloacae* (ESBL) were among the most common positive cultures. The infection control nurse estimated that treatment for all 28 HAIs in 2017 cost the hospital N\$299 608.

Incidents related to poor IPC practices occur despite IPC training having been provided to newly appointed nurses during induction and regular in-service training to all nursing personnel. Also, additional information about various aspects and elements of Standard Precautions are available in all the hospital departments for all staff. An effort has been made by the hospital management team to ensure sufficient skilled nurse staffing patterns across the clinical departments to ensure easy accessibility of quality equipment and resources. Despite these activities and interventions, the incidence of HAIs remains above the hospital target. A likely contributing factor to the increased HAI rate is poor IPC practices often observed by the IPC nurse during regular rounds to clinical departments. Poor practices that have been observed include hand hygiene activities, isolation precaution adherence, and aseptic care activities such as not disinfecting hands between patients, not wearing personal protective equipment in isolation rooms or not performing aseptic care activities when performing invasive procedures.

Little research has been conducted in Namibia related to IPC. One study that focussed on the knowledge and attitudes of infection prevention and control among health sciences students at the University of Namibia established that students' knowledge of infection control and prevention is enhanced before placement in the clinical departments, though poor adherence to elements of Standard Precautions are observed in clinical departments (Ojulong, Mitonga & lipinge, 2013:1). However, there is a dearth of published literature that can provide insight into the current practices of nurses in relation to infection prevention and control. While international research has been conducted on the prevention of HAIs, there is a need to investigate the factors that influence nurses' decisions and actions to understand better their practices related to implementing Standard Precautions during patient care activities in a Namibian context. The study results may inform the approach to and the content of IPC training sessions, as well as inform strategies that may better support nurses' application of Standard Precautions in their practice. Positive changes in nursing practices related to IPC may have a positive influence on the incidence of HAIs in this hospital.

1.3 PROBLEM STATEMENT

The incidence of HAIs at the study site is above the accepted target. These HAIs occur despite several measures implemented to lower the incidence of HAIs in the hospital environment. They include changes in nurse staffing patterns, regular training on Standard Precautions for nursing personnel and provision of better equipment and resources in the hospital. Although there is extensive evidence to link nurses' lack of compliance with Standard Precautions to the incidence of HAIs (Collins, 2008:2; Haile *et al.*, 2017:2; Nieuwoudt, 2014:1) and data on factors that influence nurses' decisions about applying Standard Precautions (Nieuwoudt, 2014:1), there is little contextual understanding of how these factors may influence nurses and their nursing practice in this particular hospital in the Namibian healthcare system. Therefore, this study aimed to explore contextual factors that influence nurses' decisions and actions when applying Standard Precautions for infection prevention in their daily practice. The study findings can help to inform IPC training and strategies that may facilitate nurses' applying Standard Precautions in the clinical environment of the chosen hospital.

1.4 RESEARCH QUESTION

The research question guiding the study was: “What contextual factors influence nurses' decisions and actions when applying Standard Precautions for infection prevention in their nursing practice?”

1.5 RESEARCH AIM

The study aimed to explore the contextual factors that influence nurses' decisions and actions when applying Standard Precautions for infection prevention in a Namibian private hospital.

1.6 RESEARCH OBJECTIVES

The objectives set for this study were to:

- describe the contextual factors influencing nurses' decisions and actions when applying Standard Precautions for infection prevention in a private hospital in Namibia; and to
- explore how these contextual factors encountered by nurses influence their decisions and actions when implementing Standard Precautions at a private hospital in Namibia.

1.7 RESEARCH METHODOLOGY

A brief overview of the research methodology is offered in this section, with a more detailed explanation of the methodology provided in chapter 2.

1.7.1 Research Design

This study was conducted using a qualitative approach with an exploratory, descriptive study design. By applying an exploratory, descriptive research design, the researcher was able to describe the perceptions, ideas and knowledge of the participants about the contextual factors influencing them with respect to implementing Standard Precautions (Burns & Grove, 2003:313).

1.7.2 Population and Sampling

In this study, the target population was made up of nurses (registered nurse/midwife and enrolled nurses) working at the private hospital where this study was conducted (N=164).

A purposive sampling strategy was applied to recruit participants from this target population using specific inclusion criteria to invite professional and enrolled nurses to participate in this study. A final study sample of 16 participants for the focus group discussion were achieved.

1.8 DATA COLLECTION

Data collection is the systematic approach to collecting precise information that is relevant to the research questions or objectives (Burns & Grove, 2009:695). In this study, the researcher used focus group discussions to collect data. Focus group discussions are a data collection method in which a small group of participants gathers to discuss a specified topic or an issue to generate data (Wong, 2008:256). The focus group discussion was the most suitable option to explore the factors that influence nurses' decision and actions concerning the application of Standard Precautions (Oliveira, Cardoso & Mascarenhas., 2010:4).

Three focus group discussions were held. Each group comprised of between five to six participants. A semi-structured interview guide was developed by researcher based on relevant published literature. This guide comprised of a number of open-ended questions to stimulate discussion among and elicit data from the participants. The focus groups were facilitated by an independent person as the researcher is employed at the study site. A pilot interview was conducted prior to the first focus group occurring. No changes to the interview guide were necessary. The observer recorded the participants' discussions on a digital recording device. An independent transcriber transcribed these recordings with the transcribed interviews and recordings then returned to the researcher.

1.9 DATA ANALYSIS

Data analysis is a rigorous process where a phenomenon is broken down into its essential parts for us to understand it better (Lawrence & Tar, 2013:29).

The observer who facilitated the focus group discussions recorded the discussions on a digital recording device. An independent transcriber transcribed these recordings.

The researcher utilized thematic analysis guided by Boyatzis's process (1998) to interpret the collected data in this study. The following steps of that process were applied: familiarisation, generating a codebook, code validation, identification of themes and sub-themes, and defining and naming themes.

1.10 LITERATURE

A literature review was conducted in this study to ensure that the researcher's own experiences and preconception about the phenomenon under study are put aside purposively (Sandelowski, 2010:77). A literature integration after data analysis allowed these study findings to be comparable with similar phenomena identified and described in other published research.

1.11 DATA MANAGEMENT

The raw data (field notes, audio-recorded items and transcripts) will be sent to the supervisor who will store this as per the relevant Stellenbosch University research policy.

1.12 TRUSTWORTHINESS

Holloway (2005:161) defines trustworthiness as the process to establish the reliability and validity of qualitative research. Confirmed by Lincoln and Guba (1985:218) suggest that trustworthiness substitute validity and reliability. In this study, the researcher ensured trustworthiness by accurately representing the experiences of the participants by observing the four elements of trustworthiness, namely credibility, transferability, dependability, and conformability as stated by Krefting (1991:214). A brief summary is provided below. A comprehensive description of how these principles of trustworthiness were respected through the study is provided in Chapter 2.

In an effort to ensure credibility the focus group discussions recordings were transcribed verbatim to capture participants' views. The preliminary findings of this study were shared with participants to assess if they agree with the findings and the supervisor critically scrutinized the study at every stage.

Transferability was ensured as the researcher is providing sufficient demographic and methodology information for the readers to get a picture in their mind of where and how the study was conducted so that they can then decide how similar their context is to the one within which the study findings were generated (Holloway & Wheeler, 2010:255).

The thesis includes a detailed description of the method used for data collection and the type of data collected in this study to ensure dependability (Anney, 2014:2).

Furthermore, the researcher described her role and relationship with the participants and applied reflexivity in analysing the data to ensure that any preconceptions were eliminated from the findings mainly to ensure confirmability (Burns & Grove 2003:380).

1.13 ETHICAL CONSIDERATIONS

According to the Rivera and Borasky (2009: 2), the three fundamental principles of research ethics are applied universally. Namely: right to self-determination, right to confidentiality and anonymity and right to protection from discomfort and harm. The purpose is to protect the human participants involved in the research conducted from potential harm.

The Health Research Ethics Committee (HREC) at Stellenbosch University approved the study (S17/08/159) on 7 November 2017 (see Appendix A). The study was conducted according to accepted and applicable national and international ethical guidelines and principles, including those of the International Declaration of Helsinki of October 2008. The researcher also obtained permission from hospital management (on 10/11/17) and Biomedical Research Ethics Committee (BREC) and Research Management Committee (RMC) of Namibia on 10/10/17 (17/3/3 MH). (see Appendix B and C)

1.13.1 Right to Self-determination

Self-determination focuses on the values of autonomy and respect for the dignity and worth of all participants. The mediators (unit managers) handed out the participants' information leaflets and the informed consent form to those participants who met the inclusion criteria, including both night and day shift nurses a day before the focus group discussion.

The participants were given time to read through the information leaflet. The participants were informed about their right to refuse to take part.

Before participants took part in the study, they were advised to take the time to read the "Participant Information Leaflet" to understand the importance of the research. After reading the information sheet, participants were advised to contact the researcher or the research supervisor before signing the informed consent forms.

Prior to the beginning the focus group discussion, participants were assured that they were able to withdraw from the study without explanation at any point. They were further reassured that they did not have to offer a perspective during the discussion if they chose not to. No participants withdrew from the focus group discussions.

1.13. 2 Right to Confidentiality and Anonymity

The field worker, researcher, transcriber and the mediator signed the confidentiality agreement (see Appendix D). The participants were addressed as participant one or two to ensure that they were not identified during the focus group discussion.

1.13.3 Right to Protection from Discomfort and Harm

This study could have involved the discussion of sensitive issues, so some participants may have experienced discomfort while narrating their experiences because they might have been exposed to blood and body fluids infected with Hepatitis B, Hepatitis C, and HIV during nursing care activities. Thus, the participants were informed that if they were exposed to vicarious trauma because of the interviews, the hospital management would arrange for counselling sessions with them. The participants were also informed to contact the researcher or Health Research Ethics Committee at numbers that were provided in the participation information leaflet if there are any

further queries or any problems encountered. Additionally, participants were informed of their right not to disclose information they feel is sensitive and could cause them distress.

However, no participants became so distressed or needed counselling and focus group discussions were not affected by the sensitive issues.

The recordings were downloaded into a password-protected file that is accessible only to the researcher. The recordings were given to the transcriber for transcription after the transcriber signed the confidentiality agreement. The field notes, audio-recorded items, and the transcripts will be sent to the supervisor to be lock up and stored in a safe cabinet for five years and will be destroyed after this period.

1.14 OPERATIONAL DEFINITIONS

Nurse: A person registered in a category under Section 31(1) to practice nursing or midwifery regarding the Nursing Act 8 of 2004, of Namibia. In this study, “nurse” is used as a general term, including professional registered and enrolled nurses.

Healthcare-associated infections: A patient acquires infections or adverse events after 48 hours of admission to a healthcare setting, which was not present on the admission of the patient (WHO, 2014: HAI Fact Sheet).

Standard Precautions: A set of infection control guidelines (previously known as “universal precautions”) designed to prevent the transmission of infections from viruses and bacteria (CDC, 2016).

Occupational exposure: “reasonably anticipated skin, eye, mucous membrane, or parenteral contact with blood or other potentially infectious materials that may result from the performance of an employee's duties” (United States Department of Labor. 2012:1).

Nursing: According to the Nursing Act 8 of 2004 (Republic of Namibia, 2004), nursing "means the practice in which the nurse assists a person, sick or well, in the performance of those activities contributing to that person's health or the recovery thereof, or to a peaceful death, that person would have performed unaided, if he or she had the necessary strength, capabilities, will or knowledge."

Nursing practice: nursing activities that the nurses are performing daily (Burggraf, V. 2012)

Contextual factors: “are characteristics of the environment that are related to the effectiveness of a collaboration” (Hua, 2010:2). In this study the contextual factors are negative and positive factors that influence the application of such Standard Precautions by nurses. The “collaboration” identified in the definition above is between the nurse and the negative and positive factors. A practical example of a contextual factor that influences nurses’ decisions and actions in the application of Standard Precautions are the nurse’s knowledge and training about Standard Precautions practices, familiarity and training on elements of Standard Precautions.

1.15 DURATION OF THE STUDY

The Health Research Ethics Committee (HREC) at Stellenbosch University approved the study on the 7 November 2017. The focus group discussions were conducted on the following dates and times: Focus Group 1 on 11/11/17 at 11H00 to 12H00 (60 minutes), Focus Group 2 11/11/17 at 12H15 to 13H45 (90 minutes) and Focus Group 3 on 11/11/17 at 14H00 to 15H00 (60 minutes). The analysis of focus group discussions and transcription took place between January to March 2018. The final thesis was submitted for examination on the 30 November 2018.

1.16 CHAPTER OUTLINE

The chapters are as follows:

Chapter 1: Overview of the study

Chapter 2: Research methodology

Chapter 3: Research findings and literature integration

Chapter 4: Conclusions, evaluation, recommendations and limitations

1.17 SUMMARY

Healthcare-associated infections (HAIs), previously known as nosocomial infections, are infections that are not present in a person when admitted to a healthcare setting,

but that occur within 48 hours of that person's admission (Collins, 2008:2). Healthcare-associated infections carry many risk factors. The patient may die, or it can extend the patient length of stay, which increases cost. Healthcare professionals can be at risk of losing their careers after exposure to contaminated blood and body fluids. By exploring nurses' feelings and experience on factors that influence their' decisions and actions with regard to Standard Precautions, we can get a bigger picture of the challenges they are facing. Healthcare settings are required to have an infection control policy to provide a framework for the promotion of prevention of transmission of infectious agents among patients, staff, and visitors. There are contextual factors that prevent nurses' compliance with the infection control policies. The reasons or factors influencing nurses' adherence to standard precaution is an existent phenomenon that can increase the incident rates of occupational exposure or healthcare-associated infection. Therefore, this research followed a qualitative explorative, descriptive approach using the focus group to explore factors that influence nurse's decision and actions with regard to Standard Precautions.

1.18 CONCLUSION

This chapter described how the researcher conducted the study. It included a topic introduction, rationale, problem statement, research question, research aim, research objectives, research methodology, trustworthiness, ethical considerations, and the conclusion.

CHAPTER 2 RESEARCH METHODOLOGY

2.1 INTRODUCTION

This chapter discussed the research methodology applied to explore and describe the contextual factors that influence nurses' decisions and actions when applying Standard Precautions for infection prevention in a Namibian private hospital. Babbie (2010:74) defines research methodology as the techniques, methods, and measures used in applying the research design, including the underlying values and assumptions that justify their use. The research design chosen is discussed with justifications for its use. A description of the study setting, population and sampling, data collection, data analysis, trustworthiness, and ethical consideration is provided. This methodology was used to explore the contextual factors that influence nurses' decisions and actions when applying Standard Precautions for infection prevention in a Namibian private healthcare setting.

2.2 RESEARCH DESIGN

According to Polit and Beck (2008:762), research design is a strategy selected by the researcher to interrogate the research problem in order to offer an answer to the research question. A research design is critical in providing an outline for the study when investigating in addition to enabling the researcher to conduct the study with significant control over factors that could potentially affect the study findings' validity (Burns & Grove, 2009:696).

The researcher used a qualitative approach with an exploratory, descriptive design to explore and describe contextual factors influencing nurses' decisions and actions when applying Standard Precautions for infection prevention in a private hospital in Namibia. According to Polit and Beck (2008:762), the research design must be carefully selected based on its appropriateness and effectiveness to answer the research questions scientifically. Any research predicated on the qualitative research approach is suitable for exploring social events within a natural setting in a rather organized manner. Moreover, this approach is appropriate for examining human interactions within a social setting, such as their behaviours and experiences (Teherani, Martimianakis, Stenfors-Hayes, Wadhwa & Varpio, 2015:669). A qualitative

approach was appropriate for this study. It aimed to explore contextual factors influencing nurses' decisions and actions when applying Standard Precautions. Sandelowski (2010:78) argues that qualitative design is most suitable to provide answers to research questions like "how and why." This aligns with the aim of this study, which sought to explore the contextual factors that influence nurses' decisions and actions when applying Standard Precautions. The main motivation for choosing the qualitative approach for this study is that it allows for a collection of invaluable unquantifiable data, which might not be possible with the quantitative approach that is known to effectively generate numerical data (Creswell, 2014:206). In the qualitative approach, there are many forms of research inquiry. An exploratory, descriptive inquiry was chosen because the study aimed to explore a phenomenon and provide basic descriptions of this phenomenon (Sandelowski, 2010:78), this being those contextual factors influencing nurses' decisions and actions when applying Standard Precautions.

2.3 STUDY SETTING

The study site was a 136-bed private hospital in Namibia. The hospital has a staff complement of 290 people, of which 164 are nurses. This is a new hospital that started operations in 2016. The hospital comprises of the following divisions: a 24-hour trauma unit, a 20-bed general surgery, a 34-bed internal medicine ward, 6 operating theatres, a 7-bed gastrointestinal unit, a 6-bed neonatal intensive care unit, a 10-bed adult intensive care unit, an 11-bed paediatric unit, an 11-bed cardiac unit, a 25-bed orthopaedic unit, a 12-bed maternity ward, and supportive services such as a hospital pharmacy, radiology and pathology department.

The average daily bed occupancy is 49%, with the average length of stay per patient being three to five days. The most common diagnoses for patients admitted to the hospital are polytrauma and bronchopneumonia. The most common surgical intervention performed at the hospital include orthopaedic surgery, general surgery, and cardiac surgery.

2.4 POPULATION AND SAMPLE

The study population is the population to whom the results will apply and the population from which the researcher selects the sample (Polit & Beck, 2008:762). In this study, the target population was made up of all professional nurses (164 registered

nurses /midwives and enrolled nurses) working at the private hospital where this study took place.

2.4.1 Sampling Strategy

According to Burns and Grove (2009:349), sampling is a process of selecting a group of people to take part in a study. In this study, a purposive sampling strategy was used to invite a group of participants most likely to give rich data on the study topic. In a purposive sampling strategy, the participants are selected based on their experience or knowledge related to the research question (Burns & Grove, 2009:344). This strategy was suitable because there was a need to select those participants who were likely to give thick descriptions of the experience (Brink, Van der Walt & Van Rensburg 2012:141). Simultaneously, this sampling technique made it possible to accommodate the various levels of professional nurses (such as registered nurses and enrolled nurses) from different units of the hospital to create maximum variation in collecting data from different participants (Miles, Huberman & Saldana, 2014:30).

The researcher drew participants for this study from the group of nurses who are responsible for clinical or bedside nursing care in the clinical areas within the boundaries of the chosen hospital. These nurses can provide rich data about infection control practices relevant to the research question because they work directly with the patients for extended contact hours.

2.4.1.1 Inclusion criteria

Thus, the following inclusion criteria were applicable:

- Full-time employed professional nurses and enrolled nurses as specified by the Nursing Act (8 of 2004) (Namibian Nursing Council, 2004:32-34).
- Nurses' who provide direct patient care on either day or night shifts which have completed an infection control induction programme.
- The nurses with a minimum of six months of working experience in this hospital so that they are familiar with the hospital system.

2.4.1.2 Exclusion criteria

Nursing services managers were excluded from this study because they are not directly involved in bedside clinical nursing work.

2.4.2 Sample Size

The sample size for this study was 16 participants. The sample size was determined based on data saturation. Grove, Burns and Gray (2013:371) describe data saturation as the point at which a subset of the population provides no new information on the subject of interest. In this study, this was the point when there was no new data, or the additional data was not sufficient to generate any new codes (Grove *et al.*, 2013:371). This point of data saturation was realized after the third focus group discussion. Most guidelines suggest that at least two focus groups are required to reach data saturation, particularly in a uniform group of participants, for example, this study of nurses only (Mason, 2010:8; Kitzinger, 2005:7). Guest, Niamey and McKenna (2017:16) confirm that a sample size of two to three focus groups (at least four participants in each group) will yield most of the data on a topic in a population that is more or less uniform.

Thirty nurses who are working in the chosen private hospital were invited to participate as they met the inclusion criteria. Twenty-four participants agreed to take part in the study. While there were four focus groups, due to time and workload constraints on the day allocated by the hospital for the focus group discussions, three focus group discussions were held. The researcher decided to analyse the data from these three focus groups to determine whether a fourth focus group would need to be conducted, however after the researcher established that repetitive themes emerged from the data collected through three focus groups, the fourth focus group was not conducted. Therefore, the sample size in this study was 16 participants.

2.5 INTERVIEW GUIDE

The researcher developed a semi-structured interview guide (see Annexure F), open-ended questions were used to generate discussion among focus group participants. The researcher used the study objectives and literature review to draft an initial list of questions. Questions were then subjected to critical review by the supervisor and this was followed by a discussion between the researcher and the supervisor. Additionally,

a pilot interview was conducted to establish the clarity and usefulness of the questions and to inform the necessary changes to the questions. However, no changes were made to the interview questions after the pilot interview. The pilot interview aimed to ensure that the right questions are asked to elicit data to answer the research questions and adhere to ethical requirements.

2.6 PILOT INTERVIEW

Conducting a pilot interview prior to the main study is crucial because it informs the researcher about potential challenges and the feasibility of the study (Burns & Grove, 2009:44). One nurse from the ICU was purposefully chosen for the pilot interview. This was done to establish if the questions developed to guide the discussions are relevant, understandable and able to elicit in-depth, relevant information to answer the research questions. The pilot study also tested the clarity, completeness, and feasibility of conducting the discussions (Burns & Grove, 2009:44). The field worker who conducted the focus group discussions also conducted the pilot interview. After obtaining written consent from the nurse, a one-on-one interview was conducted at an agreed time and venue in the hospital. The collected data were transcribed and analysed (see Annexure H).

The findings of the pilot interview showed no need for modification, omissions and/or additions to the interview guide. The participant did not identify any challenges in answering the questions. The set of questions yielded data that addressed all aspects of the research question. The researcher did not include the data collected in the pilot study in the study data set.

2.7 DATA COLLECTION PROCESS

Burns and Grove (2009:695) refer to data collection as the systematic and objective approach to collecting precise information that is relevant to the research question or objectives. In this study, a systematic and objective strategy was employed that could guarantee the validity and adherence to the ethical expectations or demands.

The process of data collection could not occur until the relevant authorities granted ethics clearance and permission to conduct the study. Ethics clearance was granted by the Health Research Ethics Committee (HREC) at Stellenbosch University, who

approved the study (S17/08/159 (see Appendix A), and the Biomedical Research Ethics Committee (BREC) and Research Management Committee (RMC) of Namibia (17/3/3MH) (Appendix B). The researcher also obtained permission from hospital management (see Appendix C).

As Russell, Maraj, Wilson, Shedd-Steele, & Champion, (2008:90) state, a study must be approved by various role players within setting. Permission to conduct the study had been obtained from the hospital administration (see Annexure C). The researcher held an information session about the study with the general director of the hospital and the unit managers of the various wards. The purpose of these discussions was to inform these role players of the detail of the data collection process and facilitate organising the logistics of running the focus group discussions. These role players were regularly informed about the progress of the study. The unit managers were important in assisting the researcher because they were the link between the researcher and the participants. During the information session, the researcher informed these role players about the purpose of the study. The unit managers assisted the researcher by informing nursing staff in their wards about the study and made participant information leaflets available to those nurses who met the inclusion criteria, including both night and day shift nurses. This was done the day before the focus group discussions were to be held (see Annexures E and F). Nursing personnel who met the inclusion criteria were asked to consider the information leaflet to familiarize themselves with the content of the study, to ask questions if there were some uncertainties and to indicate then if they were interested in participating in the study focus groups. The unit managers were available to answer any questions and were able to contact the researcher for clarification on questions, however no questions were asked by the nursing personnel who expressed interest in participating in the study.

English is the official language at the private hospital, and all nurses use English for official communication. Verbal and written English was therefore used as a medium of communication in the participation information leaflets, for informed consent, and during the focus group discussion. Following the process of information giving in the paragraph described above, the participants signed the informed consent prior to the focus group discussion being held. The groups brought nurses of different cadres of

nursing, sex, years of experience and unit of service for reasons explained below together into focus groups. The venue was in the hospital conference room, which was convenient for the participants. The room was suitable because it was easily accessible, quiet and not liable to disturbances (Anney, 2014:2; Kitzinger, 2005:8).

2.7.1 Focus Group Discussions

For Wong (2008; 256), a group discussion is a strategy for collecting information through groups or small gatherings who discuss a predetermined subject or a topic in order to generate information.

Every study should collect data using a suitable method that can generate the required data to answer the research questions (Burns & Grove, 2009:695). Since this study aimed to explore the factors that influence nurses' decision and actions about Standard Precautions, a focus group discussion was the most suitable data collection method (Oliveira *et al.*, 2010:4). The study sought explanations for nurses' behaviours. Nurses are dependent on each other in the ways in which they behave, so they share everyday experiences and such information is best obtained through focus group discussions (Kitzinger, 1994:103). This study sought to understand group perceptions more than individual ones, so focus group discussion allowed the collection of data that describe a broad range of experience from the group (DiCicco-Bloom & Crabtree, 2006). In nursing, decision making may be individual, but it is influenced at a group level due to the teamwork nature of nursing practice, so the collected data in a group brings out some of the dynamics that are at play in the day-to-day practice (MacNaughton, Chreim, & Bourgeault, 2013:1).

In accordance with Kitzinger (2005), focus groups enable the researcher to get the opinions of a group of participants fully. The following factors are considered when using focus group discussions in a research project. The practice of applying Standard Precautions can be a sensitive issue. Some nurses could have been exposed to HIV or Hepatitis B because they did not apply all the elements of Standard Precautions they were supposed to apply. Thus, in-depth interviews may have had the effect of intimidating participants so that they withheld information they would otherwise have shared in a group. A focus group discussion removes the fear by bringing numbers

and focusing on the problem rather than the individual, making it possible for participants to give relatively accurate views and experiences (Wong, 2008:256).

The structuring of focus groups is essential for rich data. The size of each focus group ought to be neither too low to restrict talk or too high to make it hard to control the dialogue and permit participation by every participant (Morgan 2013:5). Morgan (2013:5) recommends between 6 to 10 participants per group while others suggest between 4 and 8 as ideal size (Kitzinger, 2005: 6). A limitation of a focus group discussion is when the researcher planned to interview larger amount participants, but only few participants turn up for the focus group discussions (Morgan, 2013:10). While the plan was to use 6 participants per focus group, only 5 participants made themselves available in Focus Group 2 and 3 despite measures to ensure they will be available.

In terms of composition, focus groups should strike a balance between homogeneity and variety of participants. The uniformity enables the discussion to take place in the group (Morgan, 2013:10) and the differences allow for the exploration of different perspectives (Kitzinger, 1994:13). Focus group discussion can be affected by the sexes of participants, for example if the women participants are more than male participants, women might dominate the conversation during data collection process (Morgan, 2013:10). In the current study, although the male participants were only six, and the female were ten, there were two male participants in each focus group. Another limitation of the focus group is when the selected participants will not have same background and experiences in order to ensure that all participants take part in discussion (Morgan, 2013:10). The focus groups were formed in such a way that participants were from different wards, different cadres of nursing, years of experience and age wherever it was possible without forming strict rules of structuring the group. The application of less strict rules on the structuring of the focus group is acceptable especially in an explorative study (Morgan, 2013:10).

For this study, the researcher recruited a field worker and an observer to conduct the focus group discussions. The purpose behind recruiting the field worker was to reduce the effect that the researcher's position may have had on the responses from the participants in focus group discussions since the researcher is the infection control officer at the study site. The field worker has a Master's in Nursing Science and is

currently busy with Doctor of Philosophy. Thus, she gained her experience in conducting focus group discussions during her master's research project. The field worker did not work at the hospital where the study was conducted and was not known to the participants. The researcher met with the field worker prior to the focus groups being held to discuss the study and the logistics associated with the focus group discussions. A second independent person acted as an observer during the focus group discussions. The role of this person was to manage the audio recording device and note any non-verbal behaviours in observational notes. The researcher was absent from all focus group discussions.

Data were collected one weekend day in November 2017 between between 11H00 and 15H00. The hospital administration allowed one day for data collection to be conducted and required that these focus groups were conducted when the clinical obligations of participants were most likely to be less. When the fourth focus group could not be held as previously explained, the nurses who would have participated were immediately informed. Verbal consent was confirmed from the participants at the beginning of each focus group to audio-record the discussions. The recordings were downloaded into a password-protected file that is accessible only to the researcher.

2.8 DATA ANALYSIS

Data analysis is a rigorous process where a phenomenon is broken down into its essential parts for it to be understood better (Lawrence & Tar, 2013:9).

The participants' discussions that were recorded on a digital recording device were given to the independent transcriptionist for transcription. The transcriptionist is a certified ATLAS.TI student trainer and Ph.D. student in Health Sciences Education at the University of Wits. The transcriptionist and the researcher discussed how to ensure the trustworthiness, reliability and the dependability of the study. The transcriptionist was paid for the transcription. The transcription of the focus group discussions took place between 14 and 18 November 2017.

During the interviews, the field worker gave a non-identifiable code to the participants, for example, participants were addressed as Participant 1 or 2. The transcriptionist adhered to the same codes. The transcriptionist transcribed the discussion verbatim to ensure the quality of the data. The researcher listened to the audio recording of

each focus groups while reading the relevant transcribed document to ensure the transcriptions were accurate. While there were a few sentences that were unclear on the audio recordings, most of the conversations were audible and the transcription accurate.

The researcher must understand the meaning of the data clearly, interpret the data by telling stories and use imagination to ensure links between the datasets (Green & Thorogood, 2014:204). In this study, the thematic analysis process as described by Boyatzis was used. A method for identifying, analysing, and reporting patterns (themes) within data is known as thematic analysis. The thematic analysis organizes, describes a dataset in detail and interprets various aspects of the research topic (Boyatzis, 1998).

This approach often goes further and allows the researchers to stay close to the data, which enhances credibility (Sandelowski, 2010:77). It also allows the findings to remain grounded in the data, enabling readers familiar with the topic to recognize their own experience of the phenomenon in the conclusions (Neergaard, Olesen, Andersen & Sondergaard, 2009). Thematic analysis was utilized to interpret the collected data in this qualitative descriptive study. The following steps of thematic data analysis as outlined by Boyatzis (1998) were followed.

Step 1: The researcher to read through the entire dataset to get familiar with the data

The audio data were transcribed verbatim into a Microsoft Word document by an independent transcriptionist. The researcher analysed all three focus groups discussions after the third focus group had been completed. The researcher listened to the audio recording, read the transcripts and continually reflected on what was being said about the thoughts or feelings implied by the participants and the meaning and relationships in the data (See Annexure H example transcript from a focus group interview). The focus was on answering the research question, so the reflection was conducted with reference to that. The researcher, read the entire data set many times to become familiar with data content, making some notes in the process on the first impressions of the data.

The researcher took note of any ideas and thoughts that came to mind about the research question based on the data. The researcher used the notes as a summary to communicate the data analysis in a concise manner.

Table 2.1: Example of notes

Excerpts from the participants' discussions	Notes generated from the excerpts
<p>P5: Standard Precautions are actions taken by healthcare professionals to ensure that they protect themselves, things like wearing gloves when you are performing invasive procedures on the patient, so that is what Standard Precautions are</p> <p>I: Thank you. Participant four</p> <p>P4: The initial standard precaution, which is needed, is hand washing to prevent cross infection.</p> <p>I: Explain further,</p> <p>P4: that is washing your hands before you enter the patient room or before touching the patient and after removal of gloves as well as after helping the patient.</p> <p>I: Thank you participant four. Participant two, do you have anything to say</p> <p>P2: it may also involve patients that are isolated. Sometimes we wear gloves, gowns or even mask to prevent ourselves.</p> <p>I: Why do we isolate the patients?</p> <p>P2: Sometimes they have infectious diseases that can spread to other patients.</p> <p>I: Participant three</p> <p>P3: We can keep the environment clean. That is staying in an aseptic environment.</p> <p>I: When you say aseptic environment. What do you mean?</p> <p>P3: staying in a place away with few germs that can cause infection</p>	<p>Activities by group protect self-personal protection equipment invasive procedures</p> <p>activities – handwashing protect others</p> <p>activities – handwashing before and after actions and activities</p> <p>isolation PPE protect self</p> <p>Infectious protect others</p> <p>Clean environment</p>

Step 2: Generating a codebook

During this step, data should be organized in a meaningful and systematic manner through a process of coding (Maguire & Delahunt, 2017:3355). Coding is a way of labelling a relatively large chunk of data into small meaningful words or phrases (Saldana, 2009:3). The coding is conducted based on the researcher's perspectives and the aim of the study (Braun & Clarke, 2006:85). The researcher created codes

from words, phrases, sentences or chunks of data relevant to the research question. Open coding was applied, meaning that codes were created from the data and modified as the researcher engaged more with the data in a reflective manner. Step 1 above gave the researcher initial ideas about the codes. For example, in Table 2.2 below, the participants kept on referring to the application of Standard Precautions to protect themselves and others. Therefore, the researcher kept coding all the sections of the data that related to the research question on all the three transcripts. All the codes generated by comparing them and modifying them as necessary were reflected upon. This process was done in Microsoft Word and highlighting was used to link the chunks of data to the codes as shown in the table below. The codebook that were generated from this code framework is illustrated in table 2.3.

Table 2.2: Code framework

Quote	→	Quote description	→	Code label
Standard Precautions (SP) are actions taken by healthcare professionals initial standard precaution, which is needed, is hand washing	→	Behaviour practice	→	SP are actions taken by healthcare professionals
Protect themselves, preventing cross infection.	→	Nurses protect themselves from acquiring infections Nurses protect others through preventing cross infections to occurs	→	protect self, protect others
things like wearing gloves when you're performing invasive procedures before you enter the patient room or before touching the patient and	→	Donning gloves during invasive procedures	→	Elements of standard precautions

after removal of gloves as well as after helping the patient		Nurses wash their hands before and after nursing care practices		
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Step 3: Code validation

Code validation refers to the cross-checking of the codes by the researcher and a co-coder to ensure that they are grounded in the data and not subject to researcher bias. The researcher revisited and re-read the data repeatedly to check if the codes were consistent with the data from which they originated (Braun & Clarke, 2006:82). It was also through this process that the researcher established that data saturation had been reached through the three focus group discussions. Through the re-reading and cross checking of codes within each focus group and over the three focus group discussions, it became clear to the researcher by the end of the third focus group discussion analysis that no new codes were emerging from the data.

The researcher sent the transcripts to the supervisor for the double-checking of the codes for consistency. There were few discrepancies in coding that occurred between the researcher and supervisor, however both the researcher and supervisor come to consensus about the final codes and code clusters. This process involved discussions between the researcher and the supervisor to agree on the coding by means of Skype sessions. Once the data extracts and code clusters had been discussed by the researcher and supervisor, a code book was developed to show. Table 2.3 offers examples of the relevant data extract (or quote), a description of what the code means and the label for that code.

Table 2.3: Codebook

Codes label	Extract/quote from data	Description
Elements of Standard Precautions	"wearing gloves when you are performing invasive procedures on"	This code identifies the elements of Standard Precautions
Emergency	"the situation of emergency-the flight and fight situation."	This code refers to emergencies which hinder nurses to apply elements of Standard Precautions

Availabilities of resources make it easy	"also, the availability of like we have gloves in different sizes."	This code refers to a situation which enables nurses to apply elements of Standard Precautions
Positive reinforcement, and motivating factors	"suggestion like a motivating factor towards encouraging nurses."	This code refers to positive, motivating factors which support nurses to apply elements of Standard Precautions

Step 4: Identification of themes and sub-themes

A theme is a pattern that shows something of interest to the research question in the data. Themes are developed from patterns, frequency, relationships and the meaning of words or statements based on generating codes. Each theme should be defined adequately to make it clear and distinct from others (Braun & Clarke, 2006:82). To develop the themes, the researcher grouped related codes, creating sub-themes. Sub-themes were then combined into themes based on similarities in the meaning of the codes and or relationships in the codes (Braun & Clarke, 2006:82). The researcher critically interrogated the codes bringing those that were related together to form broad themes that reflected something about the research question. The researcher traced the themes back to the codes and to the data chunks that gave rise to the code to formulate meaning for the themes. The table below shows the codes, sub-themes, and the themes. This process was to ensure that codes belong exclusively to one theme or at least are more associated with one theme than others are. Some codes were moved from one theme to a more suitable theme.

Table 2.4: From codes to sub-themes to themes

Codes <ul style="list-style-type: none"> • Standard Precautions are actions taken by healthcare professionals • Protect self, protect others 	Codes <ul style="list-style-type: none"> • Distracted due to time pressure • Urgency interferes with correct practice • Emergency • Lack of integrity • Negligent attitude • Staff shortages/ 	Codes <ul style="list-style-type: none"> • Easy access for use • Planning despite the situation • Management support • Availabilities of policies 	Codes <ul style="list-style-type: none"> • Positive reinforcement • Positive, motivating factors • Incentives • Hand hygiene audits • Competitions
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<ul style="list-style-type: none"> • Elements of standard precautions • Cross infection prevention • Hand hygiene most effective to prevent the spread of infections. 	workload	<ul style="list-style-type: none"> • Support by infection control nurse • Availabilities of resources make it easy 	
↓	↓	↓	↓
Sub-theme <ul style="list-style-type: none"> • Being familiar with standard precautions • Being trained about standard precautions 	Sub-theme <ul style="list-style-type: none"> • Time and workload pressure • Personal practice behaviours • Management support 	Sub-theme <ul style="list-style-type: none"> • Easy access to resources • Support from IPC nurse 	Sub-theme <ul style="list-style-type: none"> • Unexpected Audits and Standard Precaution Competitions.
↓	↓	↓	↓
First emergent theme: Knowledge and training about Standard Precautions	Second emergent theme: Barriers to Standard Precautions	Third emergent theme: Enablers for Standard Precautions	Fourth emergent theme: Reinforcing behaviour change

Step 5: Defining and naming themes

At this stage, the themes generated in the previous step are reviewed and consolidated to ensure that there is none overlapping or duplication of themes. Each theme was then given a final name, described and accompanied by a supporting quotation from the transcript to confirm that the theme is grounded in the data (Zalewski *et al.*, 2013). Four broad themes emerged from the data analysis. These are presented in Table 2.5 below.

Table 2.5: Defining and naming themes

Theme name	←Theme description	←Quote
Knowledge and training about Standard Precautions practices	This theme refers to what the participants' views are about the when to apply elements of Standard Precautions. ←	“Standard Precautions are actions taken by healthcare professionals to ensure that they protect themselves” (T1, P5, L11) ←
Barriers to Standard Precautions	This theme refers to factors within the working environment that persuade nurses to decide to engage in activities that do not comply with Standard Precautions.	“things like time and pressure of work, the volume of the patient makes us race against the time, in the process, you will end up making shortcuts” (F2: P6).
Enablers for Standard Precautions	This theme refers to factors that make application of elements of Standard Precautions easier for nurses. ←	“Ward stock is being ordered on a regular basis; thus there is no shortage of stock of, we do not need to borrow equipment such as gloves or aprons from other wards” (T1, P1, L74). ←
Motivating behaviour change.	This theme refers to what can be done to support nurses in applying Standard Precautions correctly all the time in patient care activities. ←	“... I think if we can have competitions or events or something that is of positive reinforcement that will bring recognition, not upon an individual, but upon a unit [...] the true value of traditional continuing education and its outcome in changing an individual's practice.” P5, T1, L83) ←

2.9 LITERATURE REVIEW AND INTEGRATION

For this study, an integrated approach was chosen to present the relevant published literature as part of the study findings chapter rather than a stand-alone chapter. While

no literature review chapter is provided, a focussed and rigorous literature review was conducted. The process is described in the following chapter.

A broad based literature review was conducted during the proposal development in order to substantiate the need for this study to be done. These sources were identified by applying a search strategy to identify studies relevant to the research topic. Keywords derived from the research question in Chapter 1 provided direction in the search strategy. These keywords were: Standard Precautions, compliance, healthcare-associated infections, nurses, factors.

A more focussed review was conducted once the data analysis had been completed informed by the themes and sub-themes that emerged from the data. The findings from this more focussed literature review were used to contrast, highlight and situate the study findings within the current body of discipline knowledge related to the study topic.

2.10 TRUSTWORTHINESS

Holloway (2005:161) defines trustworthiness as the process to established the reliability and validity of qualitative research. In this study, the researcher ensured trustworthiness by accurately representing the experiences of the participants by observing the four elements of trustworthiness, namely credibility, transferability, dependability, and conformability as described by Krefting (1991:214).

Credibility

As reported by Brink *et al.* (2012:172), credibility reflects the truth of the data provided, and it exists when the provided data reflect the real perception of the participants. Through a detailed description of the participants' discussions, the researcher was able to ensure internal validity. The followings were steps that are essential to ensuring credibility, and which the researcher used for this study.

The method allowed the researcher to stay close to the data, which enhanced credibility (Sandelowski, 2010:77). It also allowed the findings to remain grounded in the data, enabling readers to become familiar with the topic and to recognize their own experience of the phenomenon in the conclusions (Neergaard *et al.*, 2009).

Verbatim transcription: The recorded focus group interviews were transcribed verbatim to ensure that the participants' views were accurately captured in the transcripts and were used for data analysis.

Participant feedback: The researcher confirmed the preliminary findings of the study with the participants to ensure that the findings are a true reflection of what the participants have mentioned in the focus group discussions (Creswell, 2013:25). The preliminary findings were shared, discussed, and confirmed with the participants.

Peer debriefing: The research supervisor acted as a peer for debriefing, reviewing and asking critical questions about the study, as well as the interpretation of the data (Creswell, 2013:252; Robson, 1997:404). The data transcripts and the findings were shared with the supervisor on several occasions during the discussion of the findings and when reflecting back on the methodological steps are taken to arrive at the themes.

Transferability

Transferability means that results emerging from the research study can be transferred to other contexts and readers (Holloway & Wheeler, 2010:255). a judgement on the specific details of the research situation and methods and compare them to similar situations that the reader is familiar with (William, 2006:4). Therefore, in order to provide a reader with sufficient information on which to make this judgement, the researcher has provided detailed information and thick description about the background, setting and the methods applied to answer the research question of this study. In addition, the researcher ensured that data collection only stopped when saturation was reached, which occurred in the third focus group discussion. By purposively selecting the sample, the researcher ensured that rich and as diverse as possible data was collected which enhance transferability (Polit & Beck, 2014:270).

Dependability

Polit, Beck and Hungler (2001:315) describe dependability as the stability of the results if the same study is carried out in a similar context, methods, and participants. A detailed description of the methodology of how the data were collected and the type of data collected in this study was provided to ensure dependability (Anney, 2014:2).

Also, the supervisor, through critical review, examined this data and subjected it to criticism and revisions as necessary.

Confirmability

Confirmability is a level of objectivity achieved if the findings of the study can be proven to have emanated from the data (Polit *et al.*, 2001:315). The researcher described her role and relationship with the participants and applied reflexivity in analysing the data to ensure that any preconceptions were eliminated from the findings. During data analysis, the researcher acknowledged her prejudices or assumptions to reduce the risk of being misled by own experiences and interpretations. Additionally, the researcher used a field worker to collect data, to ensure that the participants' views were not influenced by what they thought the researcher wanted to hear since the researcher is the nurse in charge of infection control at the study site.

The field worker has experienced in conducting focus group discussions. She is in possession of infection control, and prevention diploma and master's in nursing, both from Stellenbosch University. She signed a confidentiality form.

Furthermore, the supervisor also analysed the data to confirm if the researcher's interpretations were a true reflection of the data. The study demonstrated rigour with the proved confirmability through transferability, dependability, and credibility.

2.11 CONCLUSION

This chapter entails a detailed discussion of the research methodology and design. A qualitative, descriptive approach was used to seek an in-depth understanding of how contextual factors influence nurses' decisions and actions in applying Standard Precautions. To achieve the study objectives, the focus group discussion was believed to be the most suited data collection options. The focus group discussions were auto-taped and transcribed by independent people. Thematic analysis was utilized to interpret the collected data. With the assistance of the supervisor, the researcher creates themes and sub-themes for the study. In Chapter 3, the findings of the data analysed and literature integration will be discussed.

CHAPTER 3: RESEARCH FINDINGS AND LITERATURE INTEGRATION

3.1 INTRODUCTION

Chapter 1 provided an overview of the study while Chapter 2 offered a detailed discussion of the research design and methods applied. The study findings are presented in this third chapter. Themes that emerged from the participants' data are discussed and supported with verbatim quotes as well as literature integrated into the discussion of each theme to situate, support or contrast the data.

A qualitative approach in the form of exploratory, descriptive study design was applied to gain insight into contextual factors that influence nurses' decisions and actions when applying Standard Precautions for infection prevention in a private hospital in Namibia.

The findings emerged from a thematic analysis of data collected from three focus group discussions. The first section of the discussion offers a profile of participants. Thereafter, the themes and sub-themes that emerged from the data and how these relate to current published literature are discussed.

Published literature is integrated into the presentation of these findings. While a literature review was conducted during the early stages of developing the research proposal in order to justify and situate the research problem, a second more focused literature search was conducted once the study data had been analysed. The purpose of the second literature review was to situate, compare and support the findings from this study by integrating relevant literature. The themes and sub-themes that emerged from the data guided the keywords that were used to identify relevant published literature. Specific keywords or phrases included the following:

- Standard precautions (as a stand alone keyword), and then with:
 - Nursing practice
 - Barriers
 - Enablers
 - Behaviour change

The keywords were entered singly and in combination into three electronic databases, namely PubMed, Cochrane, and CINAHL. The researcher did not include articles

published before 2003 in the review with the exception three articles that provided specific depth to the topic under study. A total of 36 articles were included in the literature review after reviewing the abstracts of the returned search results to determine the relevance and appropriateness of the study.

3.2 SECTION I: PROFILE OF PARTICIPANTS

The biographic data of the participant sample is presented in this section. The sample is described in terms of age range, sex profile, nursing qualifications and work experience to provide a good picture of the diversity of participants who contributed to this study.

The final sample for this study comprised of 16 participants who met the inclusion criteria and who participate in the focus group discussions (see section 2.4.1.1 in Chapter 2). Of the 16 participants, ten were female, and six were male participants. The sex profile of this sample is similar to the sex profile of the hospital in that there are currently 102 female nurses and 62 male nurses employed at the hospital. The age range of participants was 24 years as youngest to 55 years of age as the eldest participant.

On average, participants had 8.3 years working experience within a range of two to 20 years of experience as a nurse. Six participants were enrolled nurses, with ten participants being registered nurses. The participants worked across a variety of departments in the hospital, including the emergency department, the general surgical, medical, orthopaedic and paediatric wards, the intensive care unit (ICU) and neonatal ICU, theatre and the maternity department. A summary of the demographic data is provided in Table 3.1.

Table 3.1: Demographic profile

Participant	Age	Sex	Nursing qualifications	Work experience	Nursing unit
1	24	Female	Enrolled nurse	4 years	Neonatal ICU
2	24	Male	Enrolled nurse	3 years	Maternity
3	25	Female	Registered nurse	2 years	General surgery
4	25	Female	Registered Nurse	5 years	Emergency department
5	26	Male	Registered Nurse	4 years	ICU
6	26	Female	Enrolled nurse	4 years	Paediatrics
7	26	Female	ICU Trained Registered Nurse	5 years	ICU
8	27	Female	Registered Nurse	3 years	Emergency department
9	28	Male	Enrolled nurse	5 years	Emergency department
10	28	Male	Registered nurse	7 years	Theatre
11	33	Female	Registered nurse	11 years	Medical ward
12	33	Male	Registered nurse	12 years	Orthopaedic department
13	34	Male	Enrolled nurse	13 years	General surgery
14	36	Female	Registered Nurse	16 years	Maternity
15	40	Female	Enrolled nurse	19 years	Paediatrics
16	55	Female	Neonatal ICU Trained Registered nurse	20 years	Neonatal ICU

The description of the participants who comprised the study sample makes it evident that they reflected the various designations of nurses across diverse departments and a range of experience and as such were able to provide rich data in relation to the research question.

3.3 SECTION II: DISCUSSION OF THEMES

A detailed description of the themes that emerged from the data analysis process as described by Boyatzis (1998) is provided in this section. Four broad themes emerged, namely:

- ‘knowledge and training about Standard Precautions practices,’
- ‘barriers to Standard Precautions,’
- ‘enablers for Standard Precautions,’ and
- ‘motivating behaviour change.’

Table 2.6 summarizes the four themes and their particular sub-themes that emerged from the study data.

Table 3.2: Themes and sub-themes

1. Knowledge and training about and training Standard Precautions practices	<ul style="list-style-type: none"> • Being familiar with Standard Precautions • Being trained with respect to Standard Precautions
2. Barriers to Standard Precautions	<ul style="list-style-type: none"> • Time and workload pressure • Personal practice behaviours • Management support
3. Enablers for Standard Precautions	<ul style="list-style-type: none"> • Easy access to resources • Support from IPC nurse
4. Motivating behaviour change	<ul style="list-style-type: none"> • Reinforcing positive behaviours

Please note that in the following subsections where verbatim quotes are used, these are presented in *italics*. In the reference provided at the end of each quote, the following key applies to identify where the quote is found in the data:

- (T) refers to the transcript, during the transcription, the transcriptionist labelled focus group discussion one as the transcript 1, focus group discussion two

was labelled as transcript 2 and the third group discussion was labelled as transcript 3.

- (P) to the page number, and
- (L) line numbers.

3.4 THEME 1: KNOWLEDGE AND TRAINING ABOUT STANDARD PRECAUTIONS PRACTICES

The participants expressed that a person's knowledge and training about Standard Precautions practices is important in influencing decisions and actions when applying these in practice. During discussions, the participants identified that Standard Precautions or universal precautions are those actions performed by healthcare professionals to prevent healthcare-associated infections. These also serve as guidelines to prevent and control infections. One participant indicated that Standard Precautions refer to all the actions that nurses take to prevent cross-infection between the patients or between the nurse and the patients.

“Standard Precautions are actions taken by healthcare professionals to ensure that they protect themselves” (T1, P5, L11)

Another participant indicated that the word 'standard' in Standard Precautions establishes a certain level of performance for nurses to adhere to in terms of providing a measure of the level of care required to prevent the spread of infections.

“For example, inserting an IV line the way you do it in maternity should be the same standard you use in (Intensive Care Unit) ICU. The way you prepare the trolley, and everything should be standard” (T3, P3, L203)

In the literature, many authors confirm that Standard Precautions are actions performed by a healthcare professional to prevent healthcare-associated infections (Mehta *et al.*, 2014:179). Standard Precautions are a set of recommended infection prevention and control measures published by the Centre for Disease Control (CDC) that have been proven to be effective infection control measures (Siegel *et al.*, 2007:1). Standards are recognized practices that are acknowledged as being correct within the healthcare setting (WHO, 2010:2). The WHO (2010:2) guidelines further define the standards of applying precautions as guidelines that direct a healthcare professional on how to act and provide consistent infection control measures during the course of

their nursing career. Standard Precautions play a vital role in nursing care activities, as they are considered to be the foundation for quality care and for the prevention of infections (Collins, 2008:4).

Studies show that ‘own knowledge’ in the application of Standard Precautions is necessary. However, the nurses’ knowledge and training about Standard Precautions practices elements are impacted by the variables such as the nurses’ age group, sex, nursing qualifications and work experience (Efsthathiou *et al.*, 2011:2).

This theme encompasses two sub-themes that are the following:

- **Sub-theme one: being familiar with Standard Precautions**
- **Sub-theme two: being trained with respect to Standard Precautions**

Table 3.3: Sub-themes

Theme 1 Knowledge and training about Standard Precautions practices	
Sub-theme 1.1 Being familiar with Standard Precautions <ul style="list-style-type: none"> • Knowing the purpose of Standard Precautions • Elements of Standard Precautions • When to implement Standard Precautions 	Sub-theme 1.2 Being trained with respect to Standard Precautions <ul style="list-style-type: none"> • Nursing personnel • Other personnel and visitors.

3.4.1 Sub-theme 1.1: Being familiar with Standard Precautions

Across the three focus groups, participants expressed the idea that their knowledge of the purpose, elements, and timing of Standard Precautions influenced the manner in which they applied these in their practice.

3.4.1.1 Knowing the purpose of Standard Precautions

The participants indicated that the purpose of performing Standard Precautions is to protect themselves and others from healthcare-associated infections. As one participant expressed in the quote provided below, nurses should consider all patients

as infectious patients and should apply Standard Precautions to all patients when nursing them to prevent cross-infection. The participants also articulated the idea that the patient environment, medical equipment, or linen that are contaminated with infectious body fluids such as faeces and urine play a role in the spread of infections. In summary, they suggested that the purpose of healthcare professionals applying Standard Precautions is to prevent the spread of infections to other patients and to themselves.

"I think these are the points where you try to make sure that you prevent patients from getting nosocomial infections and also to try and prevent spread of infection among patients like from one patient to the other patient and also to make sure that you protect the nurses from getting infected like from the waste and patients with infectious conditions." (T2, P1, L99)

" Sometimes we wear gloves, gowns or even a mask to protect ourselves." (T1, P1, L17)

Published literature confirms that healthcare workers should apply Standard Precautions to all patients and in all conditions, regardless of diagnosis or presumed infection status (Mehta *et al.*, 2014:179). The reason that healthcare workers should apply Standard Precautions is that all blood, bodily fluids, secretions, excretions, invaded skin, and mucous membranes may contain transmissible infectious agents (CDC, 2007:66).

The primary sources of HAIs that were identified by the participants were the common sources described by the literature. Amoran and Onwube (2013:156) note that the primary sources of HAIs are patients, healthcare workers, and the hospital environment. HAIs can be acquired through cross-infection during the delivery of many direct patient care activities, such as drawing blood samples, performing wound care, inserting urinary catheters, putting up the intravenous line, and airway suctioning, among others. When taking care of the next patient, the gloves and aprons have to be changed to prevent cross infection.

There was a similar finding by the researchers about why nurses should be compliant with Standard Precautions during direct nursing care activities. Among all health care workers, nurses are at higher risks of acquiring infections, because of their direct

nursing care activities. Nurses are exposed to infections while caring for patients with infections such as the hepatitis B virus, hepatitis C virus, and acquired immune deficiency syndrome (AIDS) (Yenesew & Fekadu, 2013:1). A study of occupational exposure to blood and bodily fluids demonstrated that exposure occurs when nurses handle and dispose of contaminated sharps, handle specimens, handle laundry, and when they clean contaminated surfaces and items (Burton, 2017:1).

Unlike the WHO's recommendation, which states that Standard Precautions should be applied to each patient no matter their health status (Mehta *et al.* 2014:179), the participants also agreed that Standard Precautions apply to every patient, regardless of the patient's suspected or confirmed infection status, as admitted patients may have hidden colonizations or infections with significant microorganisms. Their discussion reinforced the fact that there is an understanding that without nursing personnel implementing Standard Precautions, infections could spread.

3.4.1.2 Elements of Standard Precautions

Only one participant noted that infection prevention guidelines do exist. The participant said that the policies and guidelines are accessible in all departments and that these serve as guidance in case of uncertainty about the elements of Standard Precautions.

The participants saw the elements of Standard Precautions to include hand hygiene and personal protective equipment, waste management, sharps management, environment, and equipment hygiene.

A strong collective view among participants was that effective hand hygiene is fundamental to prevent healthcare-associated infection (HAIs), and this was identified as the most essential element among all other Standard Precautions. A participant commented that hand washing is necessary before putting on gloves and then after removing the gloves as well as before and after being in contact with the patient environment.

“The initial standard precaution which is needed is hand washing to prevent cross infection ...washing your hands before you enter a patient room or before touching the patient and after removal of gloves as well as after helping the patient” (T1, P4, L13-15)

“Top of the list is hand washing ... There is no activity which is better than the hand washing and disinfecting, it is effective ... ” (T2, P6, L114)

One participant noted that the spread of infections is driven by nurses' contaminated hands and an unclean environment. The participant felt that the patient's hospital environment must be clean and without germs.

“Sometimes they have infectious diseases that can spread to other patients” (T1, P2, L19)

“We can keep the environment clean. That is staying in an aseptic environment” T1, P3, L21)

The studies support the participants' thoughts that nurses' contaminated hands are a major factor underlying the spread of infections in the healthcare settings (Mathur, 2011:611; Pittet, 2005:258). Good hand hygiene practices assist healthcare workers in minimizing the spread of infectious diseases, including influenza, methicillin-resistant staphylococcus aureus, hepatitis A, and many more such diseases (CDC, 2014:3). Thus, it is essential for healthcare workers to adopt hand hygiene practices when in contact with the patient or patient environment. In the literature there is consensus that hand hygiene is an essential and useful way to prevent HAIs (Mathur, 2011:611; Pittet, 2005:258).

The participants identified the following as other elements of Standard Precautions to prevent and control HAIs: wearing personal protective equipment, waste management, sharp object management, linen management, disinfection of equipment between use for various patients, sterilizing instruments, aseptic techniques, and a clean environment.

“... things like wearing gloves when you are performing invasive procedures on the patient, is Standard Precautions,” (T1, P5, L11)

“I think it refers to things that we should do to prevent infection like sharp management and waste management” (T3, P5, L192)

“Because there is a specific washing machine for contaminated linen and should always wash our hands” (T2, P2, L148)

Regarding other elements of Standard Precautions, the participants' views were supported by Bouchoucha, (2014:2). This author identifies elements of Standard Precautions as including PPE (e.g. face masks, gloves, gowns), hand hygiene, respiratory hygiene and cough etiquette, safe injection practices, proper waste management, prevention of occupational exposure and the safe handling of contaminated surfaces, and equipment in the patient environment as the elements of Standard Precautions.

3.4.1.3 When to implement Standard Precautions

Participants offered a variety of scenarios during discussions that were related to a person's knowledge of when to implement Standard Precautions. These scenarios reinforced the timing of hand washing and the use of gloves for invasive procedures as necessary knowledge and then extended to knowledge of when to implement personal protection activities and when to implement of waste management.

“Standard Precautions are actions taken by healthcare professionals to ensure that they protect themselves, things like wearing gloves when you are performing invasive procedures on the patient, so that is what Standard Precautions are” (T1, P5, L11)

During the discussions, participants verbalized the fact that Standard Precautions are implemented when caring for a patient who is isolated due to an infectious disease as nurses wear PPE upon entering the patient's room. They also recognized the fact that nurses must not walk around with the same protective clothing, for example, gloves, and aprons, when working between various patients. Rather, they are obliged to remove the PPE immediately when leaving the isolation room.

“It may also involve patients that are isolated. Sometimes we wear gloves, gowns or even a mask to protect ourselves.” (T1, P2, L17)

Another activity related to the personal protection that was highlighted was that nurses are not allowed to replace the cap of used needles after injecting a patient, and this is done to prevent needlestick injuries. The participants further suggested that the disposal sharp objects in a similar manner includes other sharp objects such as blades.

“Like you are not supposed to recap the needles after injecting you have to dispose of as a set to prevent harm to yourself and the patient.” (T3, P5, L195)

Standard Precautions must be implemented to manage medical waste properly. Medical waste includes items such as infectious waste. It includes items that are contaminated with blood and other body fluids, sharps waste, anatomical waste, and pathological waste which, and general waste (Jolla, 2015:1). A participant stressed that medical waste must be separated into the correct available coloured bags.

“bloodstained waste is disposed of in red bags separated from the general waste which are disposed of in the black plastic bag.” (T3, P5, L197)

The medical waste that is soaked with blood and body fluids is considered to be infectious waste and must to be is disposed in red plastic bags and incinerated (WHO, 2014:1). WHO (2014:1) defines management of medical waste as the extent to which nurses separate and dispose of waste according to the classification. Medical waste includes general waste, recycle wastes and infectious waste. Infectious waste is further classified as all waste items that contain patient blood or body fluids, for example used sharps, anatomical parts, gauzes soiled with blood and waste from the laboratory which contains blood or other samples. According to Chaerul, Tanaka and Shekdar (2008:442), each patient generates only a small portion of infectious waste per day. The general waste generated by the patient per day is the largest portion. However, if the small portion of the infectious waste is mixed with general waste, the complete waste can possibly become infectious, for example, if the nurses disposes of blood-stained gauze in black plastic bags instead of a red plastic bag or disposes of a used needle in black plastic instead of sharp safety boxes. The risk for healthcare workers, waste handlers and public at large being exposed to infections are high. There is an association between poor separation (segregation) of medical waste and healthcare-associated infections. Proper waste management in the healthcare setting is essential to prevent cross-infection. A proper waste management system is possible in healthcare setting if regular in-service training is provided to the entire healthcare providers (Chaerul *et al.*, 2008: 442).

3.4.2. Sub-Theme 1.2: Being trained with respect to Standard Precautions

In all the focus groups, participants noted that ongoing in-service training for nurses as well as other people involved in the healthcare environment in certain aspects is necessary to maintain knowledge levels related to Standard Precautions.

3.4.2.1 Nursing personnel

The participants pointed out that adequate knowledge is necessary to support nurses in applying elements of Standard Precautions when caring for patients, and in-service training opportunities are necessary to supplement and maintain the requisite knowledge and skills. Participants stated that training is an important element that facilitates the implementation of Standard Precautions in their care activities.

“For example, we used to know how to perform hand hygiene unquestionably such as from the time we graduate from nursing school so that knowledge has been upgraded, so we were not adequately or adequately performing the hand hygiene until there was a training session that was ongoing in this facility.” (T1, P5, L53)

However, participants offered their ideas regarding the fact that a formal training programme was not sufficient, and they noted that on-the-spot training should also take place concurrently. In this manner, the deficit of any knowledge or skill could be addressed immediately.

“Training needs to be a continuous activity. My colleague has also alluded to the possibility of on-the-spot training” ... (T3, P4, L205)

There are similarities between the concerns expressed by participants in this study and those described by Magadze (2016:4), who notes that on-the-spot training opportunities are necessary to supplement and maintain the requisite knowledge and skills. Amoo, Makinde and Tijani (2012:2) examined the contextual factors influencing healthcare workers' behaviours related to their knowledge of Standard Precautions. The findings of this study demonstrated that a lack of on-the-spot training regarding Standard Precautions is related to the low rate of healthcare workers complying with these guidelines. These authors recommended that healthcare workers should

receive orientation, on the spot and continuous in-service training with respect to the elements of Standard Precautions.

3.4.2.2. Other personnel and visitors

The participants stated concerns regarding the poor compliance of the kitchen staff with regard to Standard Precautions, providing an example of circumstances where kitchen personnel did not wear protective equipment when serving a meal. Consequently, the participants suggested that outsourced service personnel, for example, those working in catering and the cleaning services, should also receive orientation regarding the elements of Standard Precautions to ensure consistency across service delivery in relation to implementing Standard Precautions.

“Sorry I wanted to just add on the catering staff I have noted that it is not always that they have their hat all times when they come to serve meals ... some cleaning staff do not have a clue about infection prevention when it is coming to cleaning” (T1, P5, L165–166)

Personnel responsible for work other than nursing care, for example, people who do the cleaning and catering personnel, in an hospital environment should understand why, how, and when to clean the environment and the equipment; as well as what attire is necessary to meet Standard Precaution requirements.

The WHO emphasizes the fact that cleaners should understand the consequences of a dirty environment for the patient and the rest of the healthcare team. Additionally, CDC recommended that high-touch areas such as doorknobs, light switches, bedrails, the nurse call system, and so on should be considered as contaminated, and such areas require frequent cleaning. Murray, Muruko, Gill, Kearney, Farren, Scott, et al. (2017:2) identify the most common microorganisms capable of being transmitted from and to high-touch areas as being *pseudomonas aeruginosa*, MRSA, *acinetobacter baumannii*, and *escherichia coli*. The same authors further demonstrate that after a patient is discharged or moved, less than 50% of these high-touch surfaces are cleaned thoroughly and they suggest that train

These concerns are supported by Magadze (2016:70), who found that the cleaners demonstrated a lack of knowledge with regard to the elements of Standard Precautions. This study's findings are also supported by the studies from Nigeria,

where the poor compliance of cleaners regarding the various elements of Standard Precautions was observed, and this was ascribed to their lack of knowledge. Most literature suggests that there is a link between the knowledge and the compliance of cleaners in terms of Standard Precautions (Kermode, Jolley, Langkham, Thomas, Holmes, & Gifford, 2005:27; Luo, He, Zhou, & Luo, 2010:1107). The Royal Australian College of General Practitioners' infection prevention and control standards, RACGP (5th edition, 2014), outlined proper cleaning as another essential element of the Standard Precautions and as a means to achieve a general level of infection control and prevention. ing the cleaners to frequently clean and disinfect high-touch surfaces is critical.

A view expressed was that sharing knowledge regarding Standard Precautions with visitors is also important, as it is a manner in which nurses advocate for their patients' and their own safety. One participant emphasized focusing on every visitor as well as the nurses disinfecting their hands before entering any patient's room.

“Like I am working in ICU, but in ICU when you see even the visitors when they are coming in there is a hand sanitizer in the entrance, so they must spray so you make sure that everyone is spraying their hands even the colleagues” (T1, P4, L66)

Patients have to be visited by their relatives, colleagues or friends. Although there is no significant evidence that visitors can spread infections in healthcare settings, they are required to adhere to the hospital infection control policies (Munoz-Price, Banach, Bearman & Morgan, 2015:2). As hands are the culprit or vectors to spread infections in the healthcare settings, it is essential for the healthcare workers to emphasize and ensure the implementation of hand hygiene practices by the visitors. One suggestion was the additional provision of hand hygiene information leaflets to the visitors (Martone & Nichols, 2007:4).

Not all visitors understand transmission-based precautions such as droplet precautions, airborne precautions, contact precautions and neutropenic precautions which are displayed on the patient door (Martone & Nicols, 2007:4). It is the responsibility and imperative of the health team to provide health education to the visitors (Munoz-Price *et al.*, 2015:2).

3.5 THEME 2: BARRIERS TO STANDARD PRECAUTIONS

Given that Standard Precautions may go beyond the understanding of the responsibilities of nurses and the patient environment, the participants were able to evaluate other different contextual factors that influence the application of Standard Precautions. Across all the focus groups, the participants spent time discussing the elements/aspects and identified the factors that hinder their actions and decisions related to Standard Precautions in their practice. In all the focus groups, participants expressed the idea that a variety of environmental factors impeded the application of the elements of Standard Precautions. The contextual factors that were identified included distractions due to time pressure; urgency interfering with right practice; emergencies; lack of integrity and/or being ignorant; and negligent/lazy attitude/complacency. The participants stated that these factors make it troublesome for them to comply with the Standard Precautions.

Table 3.4: Sub-themes

Theme 2 Barriers to Standard Precautions		
Sub-theme 2.1 Time and workload pressures	Sub-theme 2.2 Personal practice behaviours	Sub-theme 2.3 Management support

3.5.1 Sub-theme 2.1: Time and workload pressures

Many participants spoke about being distracted due to time pressure. By time pressure, they meant having many responsibilities that must be completed on time and often simultaneously. They indicated that they generally try to meet the requirements of infection control practices but become distracted by the urgency of situations and emergencies that arise. The nurse's distractions may be defined as activities or situations that divert a nurse's concentration from the duty of care (Qteat & Sayej, 2014:2).

The participants felt they were tasked with too many responsibilities that have to be completed on time and that shortcuts were necessary to complete all such activities before their shift was over. For instance, as noted by one participant:

“Things like time and pressure of work, the volume of the patient makes us race against the time, in the process, you will end up making shortcuts” (T2, P6, L118)

As discussed in detailed below, time pressure, work pressure, and increase number of patients with less nurses, contributed to poor compliance of elements Standard Precautions (Efsthathiou et al., 2011:2).

The aforementioned quote corroborates the ideas of Efsthathiou *et al.* (2011:2), who assert that nurses are burdened by many duties to be completed on time. This contributes to the nurses' non-compliance with Standard Precautions, even though they might be at risk of being exposed to infectious microorganisms. Within the healthcare environment, many secondary tasks can divert the nurse's attention from a primary task. Some tasks require immediate attention, whereas others can be completed later (Qteat & Sayej, 2014:2). Performing hand hygiene activities during all patient care is one of the primary tasks in a healthcare environment. However, if the patient goes into cardiac arrest, it can divert the nurse's attention from performing hand hygiene activities. At that particular moment, the nurse will aim to save a patient's life. Nevertheless, the fact that the nurses do not perform the hand hygiene practices can adversely affect the outcome for the patient. The patient may contract HAIs (Qteat & Sayej, 2014:2).

According to the participants, the shortage of staff increases individual nurses' workloads, and they expressed concern that the heavy workload is associated with job dissatisfaction and burnout. They believe that a heavy workload interferes with correct practice and reduces the time they take to implement an element of Standard Precautions, such as putting on gloves, for example.

A nurse working in the intensive care unit said the following:

“Sometimes it is too much work, for example, you have a patient, and then that patient goes into arrest I will not think of gloves. I run quickly to the...” (T2, P3, L130)

The participants identified emergency situations as a threat to themselves and patient safety because they are contributing factors that influence nurses' decisions and actions with regard to applying Standard Precautions in their nursing practice.

One participant described emergency situations as being fight or flight situations. According to the participant, it is not feasible to go to the tap and wash your hands when the patient is dying. For example, when a patient goes into cardiac arrest, they will immediately commence cardiopulmonary resuscitation (CPR), instead of stopping to put on gloves. According to the participant, they do not think about the risk of spreading infections between patients or being exposed to infection at that moment, they think about it later. This was supported by another participant who expressed the idea that an emergency is not conducive, and it results in the fact that some of the precautionary elements might be skipped. Thus, nurses take a shortcut.

As noted by a respondent who participated in a group Focus Group 1:

“There are situations where the situation of emergency- the flight and fight situation like in ICU and all of a sudden there is asystole in the next room it is not feasible for you to go to the tap and wash your hands while the patient is dying” (T1, P5, L35)

Similarly, a participant argued that an emergency prevents one from the compliance with hand washing practices:

“...sometimes you are so busy, now you are touching a catheter there, and you are going to wash your hands, you know like in case of emergencies. There is no way that you can wash your hands the way you are you are supposed to” (T3, P3, L209)

High workload, double shifts, and staff shortage were described as possible factors influencing nurses' decisions and actions regarding applying Standard Precautions in their nursing practice. According to Nowak, Campos, Borba, Ulbricht, and Neves (2013:5), these factors can lead to medical errors. Hughes (2008) states that nurses must assess and plan patient care activities to prevent or minimize medical errors. Because, nurses do not get enough time to apply Standard Precautions, it is important that they organize their activities for the day. One way of organizing their daily activities is to prioritize in terms of their primary and secondary tasks, but to do this, the work should be accurately allocated.

The focus group discussions highlighted that the shortage of nurses is another factor that affects compliance with Standard Precautions. The participants felt that there are

not sufficient nurses in some departments, especially when the hospital bed capacity is at its maximum. Nurses are frequently occupied with too many responsibilities to carry out Standard Precautions, which contributes to poor/low compliance with Standard Precautions. They have many responsibilities, including the full examination of the patient, record keeping, administration of medication, and bathing and feeding of the patient. One participant identified frequently neglecting to perform hand hygiene between patients when busy and overwhelmed, only concentrating on ensuring that tasks are completed before the next shift report on duty.

"volume of the patient make us race against time in the process you will end up making shortcuts" (T2, P6, L118)

Poor application of Standard Precautions during an emergency has been a well-stated issue for years (Kermode *et al.*, 2005:33; Efstathiou *et al.*, 2011:54; Akagbo *et al.*, 2017:7;). Efstathiou *et al.* (2011:8) attest to the fact that an emergency situation requires performing many activities immediately, quickly, and frequently under heavy pressure. The emergency situation may affect the nurses' non-adherence to the Standard Precautions, due to the lack of time. Oliveira *et al.* (2010:161) and Gould, Wilson-Barnett, and Ream (1996:143) argue that because of emergency situations, nurses may not have sufficient time to apply Standard Precautions consistently.

3.5.2 Sub-theme 2.2: Personal practice behaviours

The applications of Standard Precautions are greatly influenced by personal practice behaviours such as ignorance, poor attitude, and complacency.

One participant noted that ignorance affects a nurse's decision and actions in complying with Standard Precautions. The participant feels that the nurses are ignorant about applying Standard Precautions. Nurses do have the necessary awareness and knowledge of standard procedures, but choose not to act on them. This attitude seems to be most evident when senior personnel, such as the unit managers, do not supervise nurses during nursing care activities. Furthermore, participants identified that some nurses only apply the elements of Standard Precautions if they observe the presence of the infection control officer in their departments.

“People do not take hand washing seriously, but we know they are supposed to do it, but” (T3, P3, L213)

One participant stated a deeply felt fear that the patient may acquire healthcare-associated infections while nurses are performing nursing roles due to ignorance, which may then have a worse impact or consequence for the patient due to nurses taking shortcuts in applying Standard Precautions. The consequences of taking a shortcut may be an increase in the incidence of healthcare-associated infections. Healthcare-associated infections were described as potentially prolonging the patient’s length of stay and increasing the patient’s medical costs. A participant, when speaking about this issue, said that nurses are not aware of the consequences of ignorance about applying elements of Standard Precautions.

“Don’t know what you are doing the consequences of what you are doing and if you knew the importance of and the consequences of what you are doing you do it right” (T3, P1, L215)

In the healthcare sector, healthcare workers tend to have different opinions regarding their safety at places of work. For instance, there are nurses who will acknowledge that they are at risk of acquiring HAIs, so they will do anything to prevent falling ill or spreading infections between the patients. On the other hand, there are those who will admit to the likelihood of acquiring the illness, but who end up underrating their vulnerability to the ailment (Orji, Vassileva, & Mandryk, 2012:3). According to Schimenti (2012:3), nurses feel threatened because of personalized risk, and this reinforces changes in their behaviour. Likewise, nurses will be more motivated to act in healthy ways if they believe that they are susceptible to a particular adverse health outcome (Orji *et al.*, 2012:3).

The purpose of nursing interventions in the healthcare sector is to improve patient outcomes. Not much is known concerning nursing interventions like influenza vaccines where the patient outcome is influenced by the decision of the nurses to implement health behaviours. It has been shown that immunizing HCWs (healthcare workers) against influenza is quite efficient in stopping this viral infection from spreading and decreasing mortality rates among patients. Thus far, the global rates of HCW vaccination against influenza are quite low, and from these, the lowest vaccination rates are those of nurses.

A participant identified laziness as another factor that hinders the application of Standard Precautions. The participant expressed the idea that laziness is an individual issue and does not affect all nurses.

"...but sometimes its laziness to wear that mask. It depends on individuals, not everyone" (T2, P1, L122)

Every nurse must perform hand hygiene between contact with patients. If nurses neglect to perform hand hygiene between patient contact, the patient can acquire healthcare-associated infection and can even die (Gould, 2014: 84).

Negative behaviours, including ignorance, negligence, laziness, and complacency, interfere with the nurses' decisions and actions when applying the elements of Standard Precautions (Mmereki, 2018:48). The study by Efstathiou *et al.* (2011:3) states that changes in the behaviour of HCWs is required. Nurses should adhere to "enhanced rules of compliance of Standard Precautions". However, the authors further argue that regardless of substantial investment in intervention strategies to change behaviour, effectiveness has not been adequately observed.

3.5.3 Sub-theme 2.3: Management support

The participants agreed that management should do more to support them in applying Standard Precautions.

"what makes it easier for us to apply is because management is proving the necessary things that we have to use, however, management is not actively involved in a conversation with the nurses who provide patient care" (T1, P4, L223)

The responsibilities of the hospital management are to ensure that the hospital's mission and vision are achieved in collaboration with healthcare workers and the outsourced services.

The hospital management could achieve their goals through effective planning, leading, and controlling the direction and organization of human resources, finance, and equipment (Seiller & Veazie, 2014:21). The direct involvement of the hospital management could reduce and prevent the spread of infections in the hospital, as

healthcare workers can spread infections such as flu or can acquire infections such as hepatitis B during patient care activities (Seiller & Veazie, 2014:21). It is the responsibility of the hospital management to administer preventive flu vaccinations and hepatitis vaccinations to the healthcare workers. Additionally, the management should ensure that there are ideal isolation rooms, hand wash facilities, PPE, proper waste management systems, well-equipped laundries, and a central sterilization system department. If these processes are in place in conjunction with another “infection prevention/control programme” such as active surveillance and training, nurses can be easily motivated to comply with Standard Precautions (Seiller & Veazie, 2014:21).

However, Seiller and Veazie (2014:21) believe that despite the availability of resources and infection control programmes, if the management is not actively involved in a conversation with the nurses who provide patient care, they will not know the shortcomings in their adherence to Standard Precautions.

3.6 THEME 3: ENABLERS FOR STANDARD PRECAUTIONS

The third theme that emerged from the all focus group was “enablers for Standard Precautions.” Across all the focus groups, the participants identified contextual factors that helped their actions and decisions related to Standard Precautions in their practice. The participants expressed a variety of environmental factors that facilitate the application of the elements of Standard Precautions. The contextual factors that were identified included resources that are easily accessible and that support the IPC nurse. According to the participants these contextual factors motivate them to comply with the Standard Precautions.

This theme includes the sub-themes as indicated in the table below.

Table 3.5: Sub-themes

Theme 3 Enablers for Standard Precautions	
Sub-theme 3.1 Easy access to resources	Sub-theme 3.2 Support from IPC nurse

In all the focus groups, the participants revealed satisfaction and some dissatisfaction with the professional support. Moreover, during their discussion of this particular topic, participants identified factors that positively enhance the application of Standard Precautions.

3.6.1 Sub-theme 3.1: Easy access to resources

The participants agreed that the availability of resources makes it easy for them to perform Standard Precautions. The participants perceived hand hygiene facilities as being readily accessible and having gloves available in different sizes was another reported contextual factor that enhanced their compliance with Standard Precautions. The participants noted that “Five moments of hand hygiene” posters were readily available at each hand wash basin, demonstrating how to perform the proper hand hygiene technique. Furthermore, hand disinfectants were available in front of the patients’ rooms, easily accessible when moving between patients, to prevent cross infection.

“Ward stock is being ordered on a regular basis; thus there is no shortage of stock of, we do not need to borrow equipment such as gloves or aprons from other wards” (T1, P1, L74).

“There are ‘five moments of hand hygiene poster’ which are showing us the steps of proper handwashing” (T1, P4, L54)

Amoran and Onwube (2013:156) and Akagbo *et al.*, (2017:4) report that the lack of PPE was reported as a problem in applying Standard Precautions in most of the studies, whereas it was not the problem in the current study. The studies have shown that PPE has been kept locked, away from where nursing care activities are provided. The non-ready availability of gloves can pose a significant risk to the patient and the nurses during emergency situations. The lack of PPE could contribute to healthcare-associated infections and occupational exposure (Nowak *et al.*, 2013:3).

The participants articulated that although prevention of healthcare-associated infections may be the most significant action to follow, there are moments when they show low adherence to Standard Precautions. Most participants recognize and adopt Standard Precautions, but a significant portion adopt temporary solutions to solve an “out of the ordinary” situation, recognizing that is risk involved.

“The only thing that you might grab is the gloves which are there so, in those emergencies, you cannot initially get into the room wanting to wash hands” (T1, P5, L36)

“We only got the gloves but also depending on the patient if the patient does not have blood we have several times carried out cardiopulmonary resuscitation without gloves” (T1, P4, L38)

This result supports the other studies' findings. Thus, it is essential that PPE should not be locked away and should be available whenever needed.

3.6.2 Sub-theme 3.2 Support from IPC nurse

Most of the participants acknowledged that the IPC nurse is an important factor in their applying Standard Precautions as this person offers regular in-service training regarding elements and processes of Standard Precautions. For example, one participant explained the hand washing technique that they were taught before graduating is very different from their current hand washing technique. Previously, they were taught to wash their hand's finger by finger, but the current technique that the infection control nurse has taught them is quite useful and is less time-consuming.

“.... she resembles a support person to the staff whereby she is coming to the ward and giving some in-service training for everyone to see so that everyone knows about the precautions” (T3, P4, L241)

“For example, we used to know how to perform hand hygiene in a certain way like from the time we graduate from nursing school so that knowledge has been upgraded, so we were not adequately or properly performing the hand hygiene until there was a training session that was ongoing in this facility. They came and told us that no wear is no longer washing finger, finger, finger we are washing hands in this manner, so with that knowledge now you feel motivated to perform the right procedure” (T1, P5, L52)

The infection control nurse (IPC) commitment is important in ensuring that elements of Standard Precautions are implemented successfully. Thus, the IPC nurse's commitment can improve the healthcare workers current skills in new handwashing techniques (Mathur, 2011:611).

3.7 THEME 4: REINFORCING BEHAVIOUR CHANGE

Reinforcing Behaviour Change were the last prominent theme that emerged from the participants' discussion. The participants expressed their ideas regarding a range of positive factors that they felt can influence their decisions and actions with regard to applying Standard Precautions in their nursing practice. The examples of such positive factor are the following:

Table 3.6: Sub-theme

Theme 4 Reinforcing Behaviour Change
Sub-theme 4.1 Unexpected Audits and Standard Precaution Competitions.

3.7.1 Sub-theme 4.1: Unexpected Audits and Standard Precaution Competitions.

With regard to factors that could motivate the nurses to comply with Standard Precautions, discussions emerged regarding positive, motivating factors and their outcomes. The participants saw that regular, unexpected audits such as hand hygiene audits could motivate nurses. They felt that the audit results for each department would ensure that the departments will compete with each other. The winning team could be awarded incentives.

Another interesting suggestion that emerged from the participants – not yet reported in the relevant literature – is competitions or events among the nurses. Holding competitions or events were anticipated as a motivating factor in encouraging nurses to continue performing the correct Standard Precautions.

The nurses that work in the maternity department came up with the following suggestion:

“... I think if we can have competitions or events or something that is of positive reinforcement that will bring recognition, not upon an individual, but upon a unit [...] the true value of traditional continuing education and its outcome in changing an individual's practice.” P5, T1, L83.

In most studies, the researchers seek to explain nurses' behaviour through focus group discussions. This study revealed that implementing behaviour change strategies would positively promote nurses' decisions and actions with regard to applying Standard Precautions in their nursing practice (Schimenti, 2012:3). This may result in better infection control practices and reduced HAIs, improved patient healthcare outcomes, and the reduction of the cost of care (Orji *et al.*, 2012:3).

Atkins (2016:76) believes that the implementation of intervention strategies reduces negative behaviours such as ignorance. The author agreed with the participants and stated that making an alcohol-based hand rub available at every bedside instead of in front of each room could improve nurses' compliance with hand hygiene. Continuing in-service training and displaying posters about the elements of Standard Precautions could promote compliance among nurses. In their study, Chen, Sheng, Wang, Chang, Lin, Tien, Hsu, ... Tsai, (2011:2) demonstrated an increment in hand hygiene compliance and decrement in HAIs owing to the immediate feedback on twenty-minute audits of hand hygiene practice against the local guideline to nurses. Another motivating factor that changed nurses' behaviour was when a certificate was presented to them if their compliance was 100%.

3.8 CONCLUSION

This chapter presented the themes that emerged from the participants' data, supported with verbatim quotes and integrated with the available literature.

The participants perceived hand hygiene facilities as being readily accessible and having gloves available in different sizes was another reported contextual factor that enhanced their compliance with Standard Precautions.

However, they believe that, the applications of Standard Precautions are greatly influenced by personal choices in a nurse's practice behaviours such as ignorance, poor attitude, and complacency. Participants recommended a direct involvement of the hospital management to play a larger role in influencing nurses behaviour choices to reduce and prevent the spread of infections in the hospital.

CHAPTER 4 CONCLUSIONS, EVALUATION, RECOMMENDATIONS AND LIMITATIONS

4.1 INTRODUCTION

This chapter presents the conclusions drawn from the study findings. Further to this, the limitations of the study are discussed and possible future focus areas for research are recommended.

4.2 CONCLUSIONS AND EVALUATION

The researcher used an exploratory descriptive qualitative approach to gain insight into the contextual factors influencing nurses' decisions and actions with regard to applying Standard Precautions in their nursing practice. Sixteen professional nurses working in a private hospital in Namibia participated in three focus group discussion.

The following objectives were set:

- Describe the contextual factors influencing nurses' decisions and actions when applying Standard Precautions for infection prevention in a private hospital in Namibia.
- Explore how these contextual factors encountered by nurses influence their decisions and actions when implementing Standard Precautions at a private hospital in Namibia.

The following sections discuss the conclusions drawn from the study findings in relation to themes that emerged from the data and the integration of relevant published literature. Thereafter, these conclusions are drawn together to speak to each of the objectives set for this study.

4.2.1 Theme 1: Knowledge and training about Standard Precautions

The participating nurses pointed out that adequate knowledge is necessary to improve nurses' compliance with Standard Precautions while caring for patients. Participants suggested that it is necessary to know all the elements of Standard Precautions to minimize the risk of spread of microorganisms from both recognized and unrecognized sources of infection in a healthcare setting. Among all the Standard Precautions,

participants believe that effective hand hygiene practice is the most important in reducing the spread of infections.

This study's findings are consistent with previous studies in the area of nosocomial infections. Many studies have shown that knowledge and training about Standard Precautions can positively influence nurses' decisions and actions when applying Standard Precautions for infection prevention (Magadze, 2016:4). Therefore, in-service training opportunities should be provided for nursing personnel, other healthcare workers (such as cleaners, catering personnel), other healthcare professionals (such as the physiotherapist) and visitors to acquire the necessary skills. This training should be provided whenever the need is identified rather than waiting for the four months of scheduled training. In particular, hand hygiene should be emphasized among the health workers and visitors to the hospital. With improved knowledge and training about Standard Precautions, the level of compliance is likely to improve, meaning that nurses' practices will be associated with a lower risk of transmission of nosocomial infections (Amoo *et al.*, 2012:2).

4.2.2 Theme 2: Barriers to Standard Precautions.

Several factors were identified as hindrances to the application of Standard Precautions. For example, negligence, laziness, complacency, and emergencies were identified as factors influencing nurses' decisions and actions with regard to applying Standard Precautions in their nursing practice. In particular, emergencies at the hospital prevent nurses from adhering to standards. The participants felt that it is not feasible to practice good hand hygiene while the patient is in need of CPR. In such situations, participants aim to save a patient's life, even if there is a risk of acquiring infections. In other situations of negligence, laziness and complacency, the nurses take a shortcut because they consider it an easier way of completing nursing tasks.

These findings are supported by work conducted by other researchers with another researchers' findings. Issues of negligence, general laziness and complacency should be addressed among nurses to influence nurses to comply with Standard Precautions during nursing care (Nowak *et al.*, 2013:5). With regard to emergencies, certain protocols should be established to help nurses strike a balance between patient survival without risk of infection and patient survival due to having been exposed to

infection. The issues mentioned here are worth considering further studies, which can help to improve nurses' adherence to Standard Precautions.

4.2.3 Theme 3: Enablers for Standard Precautions

The participants highlighted the availability of resources as a factor that could make it easier for them to adhere to Standard Precautions. In the study, the participants perceived the hand hygiene facilities as being more accessible, which enhanced compliance with Standard Precautions. The locking away of PPE made it difficult for nurses to make use of them, so they fail to apply the Standard Precautions. Besides physical resources, human resources were also seen as motivating nurses to apply Standard Precautions. In the participants' view, the direct involvement of the hospital management could reduce and prevent the spread of infections in the hospital. In addition, the willingness or commitment of IPC nurse in facilitating in-service training to nurses was another motivating factor for the participants.

The finding of this study is congruent with the published literature that states that the availability of resources makes it easier for nurses to perform Standard Precautions. Therefore, if the necessary resources are in place in conjunction with other infection prevention/ control programmes such as active surveillance and training, nurses can be easily motivated to comply with Standard Precautions. The management can motivate nurses by ensuring that resources are not only available but also easily accessible. It will ensure that nurses are adequately prepared to apply Standard Precautions. Such measures can make it easy for nurses to make positive decisions with regard to the use of Standard Precautions in patient care.

4.2.4 Theme 4: Reinforcing Behaviour Change

An interesting positive factor that emerged from this study that is not reported in the literature is the idea of implementing competition with respect to good Standard Precautions practice. The participating nurses felt that if there is a reward, it could reinforce behaviour change in their decision making and actions with regard to applying Standard Precautions in their nursing practice. This is anticipated as a motivating factor in encouraging nurses to continue performing the correct Standard Precautions.

The power of motivation in facilitating behaviour change is well documented (Doherty, 2015:4) therefore, it is the task of the management to motivate nurses in the direction of complying with Standard Precautions. If the nurses are motivated, they are likely to effortlessly implement Standard Precautions in their practice.

4.3 CONCLUSIONS RELATED TO STUDY OBJECTIVES

The participants identified and elaborated on a number of contextual factors that they consider as influencing nurses' decisions and actions when applying Standard Precautions for infection prevention in a private hospital in Namibia. The conclusions for this study are presented in relation to the two study objectives in the following discussions.

Study Objective 1: To describe the contextual factors influencing nurses' decisions and actions when applying Standard Precautions for infection prevention in a private hospital in Namibia.

The contextual factors include the knowledge level of the nurses, emergency situations, the availability of resources, nurses' attitudes, management support and level of motivation. The knowledge level, while it can be good, always has to be updated through on-the-spot training, while resources are available, they have to be easily accessible to the nurses if they are to positively influence nurses to adhere to Standard Precautions.

Study Objective 2: To explore how these contextual factors encountered by nurses influence their practice when implementing Standard Precautions at a private hospital in Namibia.

Nurses' attitudes towards applying Standard Precautions in practice consistently and correctly emerged in the focus group discussion as being negative. However, the participants noted that with management support and motivation, this poor attitude might be changed so that nurses are encouraged to improve their practice by applying standards precautions in nursing activities. The contextual factors identified in this study are useful for making changes to how continuous education, practice monitoring and engaging with personnel happen to shape nurses' practice choices in this area. The nurse's level of knowledge, availability of resources and management support

were seen to be positive influencers with respect to nurses being compliant with applying Standard Precautions. However, poor personal attitudes and motivation were seen as influencing non-compliance with applying Standard Precautions by nurses. These findings are important as they form the basis for implementing programmes that are aimed at improving nurses' practice with regard to Standard Precautions.

4.4 RECOMMENDATIONS

Based on the study findings and conclusions, the following recommendations are made:

4.4.1 Recommendations for nursing practice

Training on Standard Precautions should not be limited to nurses only but should also be applied to other health care workers (such as cleaners, catering personnel) and health care professionals and visitors. In light of the findings of this study, the focus of this training should place much emphasis on handwashing. In addition, the training should not wait for a scheduled date, but can be provided on an as-and-when-needed basis. The infection prevention control nurse (IPC nurse) should offer regular in-service training and monitoring of the elements and processes of Standard Precautions. It is the responsibility of the IPC nurse to provide induction training, in-service or refresher courses to all healthcare workers to enhance their knowledge on infection prevention and control practices (Dramowski *et al.*, 2014:2).

Resources for use in applying Standard Precautions must be easily accessible and be placed in strategic places that can help influence nurses to practice Standard Precautions. For example, placing alcohol-based disinfectants on each patient bedside can help nurses perform hand hygiene before moving away from the patient.

4.4.2 Recommendations for nursing and hospital management (unit managers and general director)

Distractions due to time pressure, work overload, emergencies, negligence, laziness and complacency should be recognized and addressed immediately by the management in order to prevent poor compliance. The nursing and hospital management should develop infection control and prevention plans to eliminate these

negative factors to promote compliance with the elements of Standard Precautions (Efsthathiou *et al.*, 2011:5).

Doing unexpected audits such as hand hygiene audits and awarding of incentives to the winning team can motivate nurses to apply Standard Precautions. Monitoring nurse hand hygiene compliance via audits and providing immediate feedback in collaboration with incentives can motivate nurses applying Standard Precautions (Salmon, Wang, Seetoh, Lee, & Fisher 2013:2).

4.4.3 Recommendations for the availability of resources

The availability and accessibility of resources is a factor that enables nurses to perform Standard Precautions. Lack or inaccessibility of resources such as hand hygiene facilities is recognized factors that can interfere with nurses' decision and actions to apply Standard Precautions (Efsthathiou *et al.*, 2011:5).

4.5 RECOMMENDATIONS FOR NURSING RESEARCH

The recommendations for nursing research can help to inform nurses strategies that may facilitate and promote nurses' applying Standard Precautions in the clinical environment of the chosen hospital. Therefore, on the basis of these findings and conclusion, some nursing research recommendations are made as follows:

Application of Standard Precautions during emergency situations should be investigated to find ways in which patients' lives can be saved without exposing both the nurse and the patient to the risk of infection.

Implementation of competition with respect to good Standard Precautions practice is important to motivate nurses.' Further studies can look at how rewards or incentives could reinforce behaviour change in nurses' decision making and actions with regard to applying Standard Precautions in their nursing practice.

Further studies should look into the accessibility of resources to enhance compliance to Standard Precautions among nurses in different hospital care settings.

Behaviour change is very important in achieving adherence. Future studies into compliance with Standard Precautions should investigate nurses' attitudes towards

Standard Precautions and what can be done to influence positive attitudes towards Standard Precautions.

4.6 LIMITATIONS OF THE RESEARCH

The findings of this study are limited by the fact that there was one study site. Therefore, the findings are very specific to this context of a private hospital in Namibia. Due to time, financial and other logistical constraints, all the focus groups were held on one day. This decision may inadvertently have narrowed the participant sample, however, the final sample was heterogeneous in nature and did include nurses from many different areas of the study site. The substantial description of the participants and the context of the study will assist others in establishing how they can make use of these findings in a different context.

The nature of this type of study lends itself to describing a phenomenon, in this instance contextual factors influencing a particular practice. While this study has revealed factors that the participants noted as being influential in their application of Standard Precautions, applying a different study design that allows for deeper engagement with these themes could be useful to understand the more complex drivers of these contextual influencers.

4.7 SUMMARY

This chapter discussed the conclusions of this study and interpret of how the findings of this study address the research objectives. The recommendations for practice and further research are highlighted and the chapter closes with describing the limitations of the study. Implementing a competition with respect to good Standard Precautions practice may help to motivate nurses. Behaviour change is very important in achieving adherence. Future studies into compliance of nursing personnel with implementing Standard Precautions are important and could focus on exploring nurses' attitudes towards Standard Precautions and measures to influence positive attitudes towards Standard Precautions.

4.8 CHAPTER CONCLUSION

In this chapter, conclusions were drawn from the study findings, which centred on knowledge, barriers, enablers and motivating behavior change as the overarching themes. This answers the research question and reaches the purpose of this study. This study provided insight into factors identified by nurses as influencing their decisions and actions when applying Standard Precautions for infection prevention in a private hospital in Namibia.

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APPENDICES

APPENDIX A: HREC APPROVAL LETTER



Approved

Response to Modifications

07/11/2017

Project ID #: 0853

HREC Reference #: S17/08/159

Title: Factors influencing nurses' decisions and actions with regard to applying standard precautions in their nursing practice in a private hospital in Namibia.

Dear Mrs Maureen Hoes,

The Response to Modifications received on 06/11/2017 was reviewed by members of the Health Research Ethics Committee (HREC) via Minimal Risk Review procedures on 07/11/2017 and was approved.

Please note the following information about your approved research protocol:

Protocol Approval Period: This project has approval for 12 months from the date of this letter.

Please remember to use your project reference number (0853) on any documents or correspondence with the HREC concerning your research protocol.

Please note that this decision will be ratified at the next HREC full committee meeting. HREC reserves the right to suspend approval and to request changes or clarifications from student applicants. The coordinator will notify the applicant (and if applicable, the supervisor) of the changes or suspension within 1 day of receiving the notice of suspension from HREC. HREC has the prerogative and authority to ask further questions, seek additional information, require further modifications, or monitor the conduct of your research and the consent process.

After Ethical Review:

Please note a template of the progress report is obtainable on <https://applyethics.sun.ac.za/Project/index/926> and should be submitted to the Committee before the year has expired. The Committee will then consider the continuation of the project for a further year (if necessary). Annually a number of projects may be selected randomly for an external audit.

Provincial and City of Cape Town Approval

Please note that for research at a primary or secondary healthcare facility permission must still be obtained from the relevant authorities (Western Cape Department of Health and/or City Health) to conduct the research as stated in the protocol. Contact persons are Ms Claudette Abrahams at Western Cape Department of Health (healthres@pgwc.gov.za Tel: +27 21 483 9907) and Dr Helene Visser at City Health (Helene.Visser@capetown.gov.za Tel: +27 21 400 3981). Research that will be conducted at any tertiary academic institution requires approval from the relevant hospital manager. Ethics approval is required BEFORE approval can be obtained from these health authorities.

We wish you the best as you conduct your research.

For standard HREC forms and documents please visit: <https://applyethics.sun.ac.za/Project/index/926>

If you have any questions or need further assistance, please contact the HREC office at 021 938 9677.

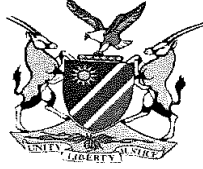
Yours sincerely,

Francis Masiye,

HREC Coordinator,

Health Research Ethics Committee 2.

APPENDIX B: APPROVAL FROM THE MINISTRY OF HEALTH AND SOCIAL SERVICES



REPUBLIC OF NAMIBIA

Ministry of Health and Social Services

Private Bag 13198
Windhoek
Namibia

Ministerial Building
Harvey Street
Windhoek

Tel: 061 – 2032150
Fax: 061 – 222558
Email: shimenghipangelwa71@gmail.com

OFFICE OF THE PERMANENT SECRETARY

Ref: 17/3/3 MH
Enquiries: Mr. J. Nghipangelwa

Date: 10 October 2017

Ms. Maureen Shirley Hoes
Stellenbosch University
P. O. Box 241
Cape Town

Dear Ms. Hoes

Re: Factors influencing nurses' decision and actions when applying standard precautions in their nursing practice in a private hospital in Namibia.

1. Reference is made to your application to conduct the above-mentioned study.
2. The proposal has been evaluated and found to have merit.
3. **Kindly be informed that permission to conduct the study has been granted under the following conditions:**
 - 3.1 The data to be collected must only be used for academic purposes;
 - 3.2 No other data should be collected other than the data stated in the proposal;
 - 3.3 Stipulated ethical considerations in the protocol related to the protection of Human Subjects' should be observed and adhered to, any violation thereof will lead to termination of the study at any stage;
 - 3.4 A quarterly report to be submitted to the Ministry's Research Unit;
 - 3.5 Preliminary findings to be submitted upon completion of the study;

APPENDIX C: APPROVAL FROM HOSPITAL

[REDACTED]

Mrs. Maureen Shirley Hoes
P. O. Box 50171
Windhoek

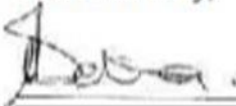
10 November 2017

Dear Mrs. Maureen Hoes

RE: APROVAL TO CONDUCT A RESEARCH [REDACTED]

Thank you for the request to conduct your research project at [REDACTED]
We gladly approve and allow you to conduct your research at our hospital.
We wish you good luck and all the best with your research project.

Yours Sincerely,



[REDACTED]

APPENDIX D: CONFIDENTIALITY AGREEMENT BETWEEN THE FIELD WORKER, OBSERVER, RESEARCHER, TRANSCRIPTIONIST AND MODERATOR

Confidentiality Clause

I the transcriptionist and assistant moderator in the data collection and analysis process of the study entitled

Factors influencing nurses' decisions and actions when applying Standard Precautions for infection prevention in a private hospital.

Solemnly pledge that I will not disclose any information from this study to anyone under whatever circumstances. I understand ethical principles underlying the need to maintain this information confidential and to that effect will adhere to the ethical principles. I am aware that failure to do so will result in certain repercussions against me.

Signature of transcriptionist/moderator/field worker/observer

.....

Date:

Signature of principal investigator

.....

Date

.....
Signature of transcriptionist/moderator

.....
Date:

.....
Signature of principal investigator

.....
Date

ANNEXURE E: INVITATION TO PARTICIPATE IN RESEARCH

PARTICIPANT INFORMATION LEAFLET

TITLE OF THE RESEARCH PROJECT: Factors influencing nurses' decisions and actions when applying Standard Precautions for infection prevention in a private hospital in Namibia.

PRINCIPAL INVESTIGATOR: Mrs. Maureen Hoes

ADDRESS:

Division of Nursing
Faculty of Medicine and Health Sciences
Stellenbosch University
PO Box 241
Cape Town
8000

CONTACT NUMBER: 021 9389823/ 9036

Dear Colleague

INVITATION

My name is Maureen Hoes and I am a student in the Master of Nursing programme at Stellenbosch University. Out of my skills as the Infection Prevention and Control officer, I would like to better understand what influences nurses in their IPC practices. These insights may contribute to developing our nursing practice and, in that sense, potentially contribute positively to patients' and nurses' safety, care experiences and outcomes.

I would like to invite you to take part in a research project that aims to explore the contextual factors that influence nurses' decisions and actions when applying Standard Precautions for infection prevention. This study was approved by the Health Research Ethics Committee (HREC) at Stellenbosch University and will be conducted

according to accepted and applicable National and International ethical guidelines and principles, including those of the international Declaration of Helsinki October 2008.

Before you participate in a study you need to understand why the research is being done and what it would involve for you. Please take time to read the information presented here which will explain the details of this project. If you have questions after reading this information sheet, you can contact me before the study begins.

Through this research, I intend to explore the contextual factors that influence nurses' decisions and actions when applying Standard Precautions for infection prevention. The reason you have been invited to take part in this study is that you apply infection prevention and control measures (including Standard Precautions such as hand hygiene, PPE, waste management, decontamination of equipment, cleaning of environment and safe injection practices) as you provide bedside nursing care to patients in your care and can, therefore, provide the best information about the topic. Study participants will be selected from full-time employed professional nurses and enrolled nurses with a minimum of six months of working experience in this hospital and who have completed infection control induction program.

Data will be collected through focus group discussions. Each group will comprise six to eight participants. Your participation will take between 45 to 60 minutes during a time agreed on with the nursing services manager that will least affect patient care delivery. A field worker, not myself, will facilitate the discussion among participants in the focus groups. I will recruit a field worker who is experienced in conducting focus group discussions. The field worker will be someone not known to you and will collect data in place of me because there is a possibility that my position can influence your contributions during focus group discussions. I will not be present when the focus group discussions take place. The focus group discussions will take place during the daytime shifts and over the weekend, however, the researcher will work with the nursing services manager and unit managers to identify periods when care delivery will be least disrupted. Researcher will ensure that these arrangements are respected in terms of logistics and keeping to time.

The discussion in the focus group will be audio recorded. The recordings will be downloaded into a password-protected file that is accessible only to the researcher.

The recordings will be given to the transcriber for transcription. The field notes, audio recorded items, and the transcripts will be locked up and stored in a safe cabinet for five years will be destroyed after this period. All the information collected will be kept private and confidential. The researcher will keep the data for this long in case it is required for forthcoming research or as a tracing system. No one will have access to the information except the researcher, transcriber, fieldworker and the supervisor.

Although I will not take part in focus group discussions, I will be aware of who the participants took part in the focus groups were through informed consent records. However, I will not identify any person or disclose any identifying information during the data collection, analysis or reporting processes and will confine my use of any information solely within the purpose of this study.

You may withdraw from the research study without explanation at any point. You may ask that any data you have supplied to that point be withdrawn/destroyed. You may omit or refuse to answer or respond to any question that is asked of you without penalty. Results of the research will be published. You will not be identified in any report or publication. Your institution will not be identified in any report or publication. If you wish to be given a copy of any reports resulting from the research, please ask us to put you on our circulation list.

There are no personal benefits involved for you as the participant; however, the findings of the study can benefit patient safety and quality nursing care. There are no physical risks involved but there could be some emotional risk when sharing traumatic or upsetting experiences.

You will not be paid to take part in the study, but refreshment will be provided to each focus group. There will be no costs involved for you if you do take part.

Should you agree to participate in the study, you will be asked to sign the accompanying consent form to confirm your willingness to take part in the study and to be audio recorded.

You can contact Mrs. Maureen Hoes at 081 6896136 if you have any further queries or encounter any problems. You can also contact the Health Research Ethics Committee at 021 9389207 if you have any concerns or complaints that have not been

addressed by the principal investigator. You will receive a copy of this information and consent form for your own records.

If you will participate in this study, please sign the attached Declaration of Consent and hand it to the investigator or field worker. Yours sincerely

Maureen Hoes

Principal Investigator

ANNEXURE F: INFORMED CONSENT

Declaration by participant

By signing below, I agree to take part in a research study entitled “Factors influencing nurses’ decisions and actions when applying Standard Precautions for infection prevention in a private hospital in Namibia.”

I declare that:

- I have read the attached information leaflet and it is written in a language with which I am fluent and comfortable.
- I have had a chance to ask questions and all my questions have been adequately answered.
- I understand that taking part in this study is voluntary and I have not been pressurized to take part.
- I may choose to leave the study at any time and will not be penalized or prejudiced in any way.
- I may be asked to leave the study before it has finished, if the researcher feels it is in my best interests, or if I do not follow the study plan, as agreed to.
- I am aware that the focus groups discussion will be audio recorded by the field worker and I give my consent to being recorded in this manner

Signed at (place) On (date)

.....

Signature of participant

ANNEXURE G: INTERVIEW GUIDE

Ground rules of the focus group discussion (Hugye, C. 2011:1).

1. The discussion will be among you while I facilitate the process.
2. All participants will be given an opportunity to speak.
3. One speaker at a time while others listen as we are tape recording
4. The speaker will address the topic of discussion
5. No dialogue between any two participants
6. No option is wrong or irrelevant
7. You do not need to agree with others, but you must listen respectfully as others share their views
8. We ask that you turn off your phones. If you cannot and if you must respond to a call, please do so as quietly as possible and re-join us as quickly as you can.
9. My role as field worker will be to guide the discussion

Interview guide

Date:

Place:

Interviewer:

Interviewee:

1. Please tell me when you apply Standard Precautions in caring for your patients, what do you think is essential to do or consider?

Probes:

- Can you explain further....?
- Can you give me an example....?

2. Are there particular problems or challenges in your ward that make your applying Standard Precautions more difficult to do?

Probes:

- Please tell me more about ...?
- Why do you think this was such a challenge ...?

3. Are there things that make it easier to apply Standard Precautions?

Probes:

- Please tell me more about ...?

4. What do you think could be done to support nurses in applying Standard Precautions correctly all the time in patient care activities?

Probes:

- How would you go about doing that....?
- You mentioned.... Could you tell me more about that?
- I am not sure what you mean by....
- Could you give me some examples?

APPENDIX H: EXAMPLE TRANSCRIPT FROM A FOCUS GROUP INTERVIEW

FOCUS GROUP DISCUSSION 1

I: INTERVIEWER

P: PARTICIPANT

I: Please tell me when you apply Standard Precautions, what is that you do when you apply Standard Precautions if you say I apply Standard Precautions. What is that you do? In other words, I don't want to pose the question so boldly, what is Standard Precautions? Participant five

P5: Standard Precautions are actions taken by healthcare professionals to ensure that they protect themselves, things like wearing gloves when you're performing invasive procedures on the patient, so that is what Standard Precautions is

I: Thank you. Participant four

P4: The initial standard precaution which is needed is hand washing to prevent cross infection.

I: Explain further,

P4: that is washing your hands before you enter patient room or before touching the patient and after removal of gloves as well as after helping the patient.

I: Thank you participant four. Participant two, do you have anything to say

P2: it may also involve patients that are isolated. Sometimes we wear gloves, gowns or even mask just to prevent ourselves.

I: Why do we isolate the patients?

P2: Sometimes they have infectious diseases that can spread to other patients.

I: Participant three

P3: We can keep environment clean. That is staying in an aseptic environment.

I: When you say aseptic environment. What do you mean?

P3: staying in a place away with few germs that can cause infection.

I: I'm going to move to question two. Are there any particular problems or challenges in your wards that may prevent you from applying Standard Precautions?

P: I don't think so, because like in ICU there are cubicles and to every cubicle there is a hand disinfectant

I: But do your colleagues use, the items are there but does you and your colleagues use those things. Participant 2

P2: I think it's being practised, everyone does that but sometimes maybe if it's too busy maybe one might forget we were gloves or gowns or even mask just to protect ourselves.

I: Give me an example, when the ward is busy, how does that contribute, just an example

P2: For example, let's say there is doctors' rounds like when doctors gathered around a patient then the other patients also call then you might run from that patient to the other patient so in between there's not enough time to wash hands or something

I: Thank you, Participant 3

P3: Actually, there is hand disinfectant in each and every place where you are going. I don't think there anything that can prevent you from using it.

P1: There is nothing stopping you from doing it but have you seen colleagues that are not doing it?

P3: No, I did not say colleagues are not doing it, most of them are.

I: What about a few others, why do you think they are not doing it?

P3: I cannot say because I did not see one.

P5: There are situations where, the situation of emergency- the flight and fight situation like in ICU and suddenly there is an asystole in the next room it is not feasible for you to go to the tap and wash your hands while the patient is dying. The only thing that you might grab is the gloves which are there you might take the gloves so in those emergencies you cannot initially you get into the room wanting to wash hands, but then some of the precautions you might skip them like hand washing as I say before.

I: Participant four can you think of another situation or some Standard Precautions that can be omitted besides hand washing during the flight and fight situation. Can you think of something besides hand washing, can you think of a practice that nurses might compromise when they are in the ward when focusing to this patient?

P4: The that nurses remember are the gloves even if gowning is needed is, except in conditions when we have isolation, but we only got the gloves but also depending on the patient if the patient is not having blood, we have several times carried out cardiopulmonary resuscitation without gloves

I: How often does that happen, particular to starting CPR without gloves?

P4: It's not more often, but it happens

I: it happens before I go to participant one. I just want participant four to explain flight fight mode, what is that?

P4: When there is a situation, there's a fear which comes to an individual then later, you first become afraid before you act.

I: participant one.

P1: I just wanted to add to what he said because one of the challenges also comes with first washing hands and then you don the gloves sometimes while the hand disinfectant is stills wet, sometimes you omit a few steps, and especially you see the hands might not be dry.

I: Is it because there is no paper towel or what?

P1: There are paper towels, but I think it's the material of the paper towel. It doesn't thoroughly dry because the correct procedure is you are supposed to dry not drape

I: so, the material of the paper towel can also contribute to people not sticking to Standard Precautions. Okay, thank you participant five, can I read the question,

P5: yes please.

APPENDIX I: DECLARATION BY THE LANGUAGE EDITOR



Director: CME Terblanche - BA (Pol Sc), BA Hons (Eng), MA (Eng), TEFL
22 Strydom Street
Baillie Park, 2531
Tel 082 821 3083
cumlaudelanguage@gmail.com

DECLARATION OF LANGUAGE EDITING

I, Christina Maria Etrechia Terblanche, hereby declare that I edited the
research study titled:

**Factors influencing nurses' decisions and actions when applying
standard precautions in their nursing practice in a private hospital in
Namibia**

**for Maureen Shirley Hoes for the purpose of submission as a
postgraduate study for examination. Changes were indicated in track
changes and implementation was left up to the author.**

Regards,

CME Terblanche

Cum Laude Language Practitioners (CC)

SATI accr nr: 1001066

Registered with PEG